National Library of Canada
Bibliothèque nationale du Canada

Canadian Theses Service
Service des thèses canadiennes

Ottawa, Canada
K1A 0N4

NOTICE

The quality of this microform is heavily dependent upon the quality of the original thesis submitted for microfilming. Every effort has been made to ensure the highest quality of reproduction possible.

If pages are missing, contact the university which granted the degree.

Some pages may have indistinct print especially if the original pages were typed with a poor typewriter ribbon or if the university sent us an inferior photocopy.

Previously copyrighted materials (journal articles, published tests, etc.) are not filmed.

Reproduction in full or in part of this microform is governed by the Canadian Copyright Act, R.S.C. 1970, c. C-30.

AVIS

La qualité de cette microforme dépend grandement de la qualité de la thèse soumise au microfilmage. Nous avons tout fait pour assurer une qualité supérieure de reproduction.

S'il manque des pages, veuillez communiquer avec l'université qui a conféré le grade.

La qualité d'impression de certaines pages peut laisser à désirer, surtout si les pages originales ont été dactylographiées à l'aide d'un ruban usé ou si l'université nous a fait parvenir une photocopie de qualité inférieure.

Les documents qui font déjà l'objet d'un droit d'auteur (articles de revue, tests publiés, etc.) ne sont pas microfilmés.

La reproduction, même partielle, de cette microforme est soumise à la Loi canadienne sur le droit d'auteur, SRC 1970, c. C-30.

NL-339 (r. 88/04)

Canada

THE UNIVERSITY OF ALBERTA

RELAXATION TRAINING, THRILL SEEKERS AND ADVENTURE ACTIVITIES

(C)

by

ROGER THOMAS COUTURE

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

OF MASTER OF ARTS

DEPARTMENT OF PHYSICAL EDUCATION AND SPORT STUDIES

EDMONTON, ALBERTA

FALL, 1987

Permission has been granted to the National Library of Canada to microfilm this thesis and to lend or sell copies of the film.

The author (copyright owner) has reserved other publication rights, and neither the thesis nor extensive extracts from it may be printed or otherwise reproduced without his/her written permission.

L'autorisation a été accordée à la Bibliothèque nationale du Canada de microfilmer cette thèse et de prêter ou de vendre des exemplaires du film.

L'auteur (titulaire du droit d'auteur) se réserve les autres droits de publication; ni la thèse ni de longs extraits de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation écrite.

ISBN 0-315-41119-8

UNIVERSITY OF ALBERTA

RELEASE FORM

NAME OF AUTHOR: ROGER THOMAS COUTURE

TITLE OF THESIS: RELAXATION TRAINING, THRILL SEEKERS AND HIGH RISK ADVENTURE ACTIVITIES

DEGREE: MASTER OF ARTS

YEAR THIS DEGREE GRANTED: FALL 1987

Permission is hereby granted to THE UNIVERSITY OF ALBERTA LIBRARY to reproduce single copies of this thesis and to lend or sell such copies for private, scholarly or scientific research purposes only.

The author reserves other publication rights, and neither the thesis nor extensive extracts from it may be printed or otherwise reproduced without the author's written permission.

(SIGNED)

R. Roger Couture

PERMANENT ADDRESS:

32 Milliken Road

Elliot Lake, Ontario

Canada, P5A 1K1

DATED: October 1, 1987

THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled RELAXATION TRAINING, THRILL SEEKERS, AND ADVENTURE ACTIVITIES submitted by ROGER THOMAS COUTURE in partial fulfilment of the requirements for the degree of MASTER OF ARTS in Physical Education And Sport Studies.

.....
Supervisor

.....

.....

.....

Date: Oct. 1, 1987

DEDICATION

As a small token of my appreciation, I dedicate this piece of work to my parents, Ernest and Charlotte, and to my sister, Nina.

Their encouragement and moral support have given me the inner strength needed to complete this thesis. As I-Ching describes it:

> Beginnings are fraught with doubts and indecision. One has not the knowledge to confidently set out, and there is the tendency to question the reality of the path, and to point to the confusion pressing in from every side. It is the internal framework that needs ordering and cohesiveness . . . What is called for is a looking inward to build one's faith and character.
>
> I-CHING

My parents have exemplified determination, effort and hard work which has given me faith and character within a caring and warm environment.

A ma soeur, qui est aussi à la poursuite des connaissances;

> J'ai dormi et rêvé que la vie était un plaisir;
> Je me suis éveillé et j'ai vu qu'elle était un devoir;
> J'ai travaillé et j'ai constaté que le devoir est un plaisir.
>
> FRIEDRICH NIETZCHE

N'abandonne pas tes rêves car ils peuvent s'accomplir si tu le désires.

ABSTRACT

With increasing numbers of people involved in outdoor activities like canoeing, kayaking and rock climbing, it is crucial that wilderness organizations seeking to meet their customers' demands, identify individual needs for adventure. Several theorists support the notion that different people have quite different optimal levels of activation (Zuckerman, 1978). Therefore, outdoor professionals are faced with providing challenging experiences that will result in excitement rather than terror for customers with similar skill levels and very different thrill seeking levels.

Low thrill seekers partaking in risk activities, may want to occasionally reduce their arousal level to a more enjoyable intensity. Studies suggests that relaxation techniques significantly alter people's levels of arousal. Therefore, a stress intervention may partially resolve the problem of differing levels of customer arousal needs.

This research described and assessed high and low stress seekers with respect to the effects of relaxation training. This exploratory field study was done in two stages: a river canoe trip and a novice white water kayak course.

Stage one examined the effects of the outdoor environment, in relation to changes in self-esteem, trait anxiety and trait sensation seeking. This study involved nine University students (Experimental group) who canoed the Wabasca river and nine others (Control group) who remained in the city. Both, answered Rosenberg's (1965) Self-Esteem Inventory, Endler's (1962) Stimulus-Response Inventory of Anxiousness

and Zuckerman's (1979) Sensation Seeking Survey, Form V. No changes were noted in self-esteem and sensation seeking yet a significant reduction did occur in trait anxiety for both groups.

Stage two described and compared high and low thrill seekers. As well, the efficiency of relaxation training in lowering arousal was investigated. The experimental group partook in a novice white water kayak course on the Upper Red Deer river. Subjects were taught the "calming response" and informed to apply it during perceived stressful events. Measuring instruments included: Neary and Zuckerman's (1979) Sensation Seeking Anxiety State Test, pre and post questionnaires, logbooks and heart rate. Results imply that relaxation training significantly reduced subjects' levels of state anxiety and state cardiac rate while sustaining their level of state sensation seeking. Some implications for relaxation techniques in adventure programs are considered.

ACKNOWLEDGEMENT

I would like to thank my graduate committee, Dr. R. B. Alderman, Dr. E. E. Fox, and Dr. M. F. R. Smith for their encouragement and interest in this thesis.

To my advisor and preceptor, Dr. H. A. Scott, I express my gratitude for the priceless encouragement and guidance he has provided me with, in his own ambiguous yet subtle ways.

A special thank you to the "Explorations 1986-87" group and volunteers, without whom this study could not have been possible.

In appreciation of their assistance in proof-reading, I would like to thank Ms. Sue Muloin and Mr. Ingo Hentschel.

Finally, my sincere appreciation to all the fellow graduate students for their moral support, encouragement, and friendship throughout my studies.

TABLE OF CONTENTS

CHAPTER		PAGE
I.	INTRODUCTION	
	Need for the Study	1
	Statement of the Problem	4
	Justification of the Study	5
	Operational Definition of the Terms	8
	Organization of the Study	11
II.	REVIEW OF THE LITERATURE	
	Introduction	12
	Theoretical Base	14
	Discrepancies in Activation Levels	15
	Sensation Seeking	17
	Anxiety	20
	Sensation Seeking and Anxiety	25
	Stress Management	26
	State Relaxation Techniques	30
	Autogenic Training	31
	Paced Abdominal Breathing	32
	The Calming Response	36
III.	METHODOLOGY OF STUDY I	
	Introduction	39
	The Upper Wabasca River	40
	Objectives of the Trip	41
	Physical Setting	41
	Hypothesis	42

CHAPTER PAGE

Study Design 42

Sample..... 43

Procedure 44

Instrumentation 44

Delimitations 46

Limitations 46

IV. RESULTS AND DISCUSSION OF STUDY I

Hypothesis 48

Results 48

Discussion 50

V. METHODOLOGY OF STUDY II

Introduction 52

A THREE-DAY WHITE WATER KAYAK COURSE

The Upper Red Deer River 53

Objectives of the Course 54

Physical Setting 54

Members of the Kayaking Crew 56

Francisco Lomez (Chico) 56

Bruce Wood 57

Joanne Blanche 58

Karen Richards 58

Thursday Night 59

Friday 60

Saturday 65

Sunday 69

Study Design 74

CHAPTER PAGE

Sample 76

Instrumentation 76

Procedure 78

Delimitations 80

Limitations 81

Hypothesis 81

VI. RESULTS AND DISCUSSION OF STUDY II

Hypothesis 1a 83

Results 83

Discussion 83

Hypothesis 1b 84

Results 85

Discussion 85

Hypothesis 1c 85

Results 86

Discussion 86

Hypothesis 1d 86

Results 86

Discussion 87

Hypothesis 2 87

Results 87

Discussion 89

Hypothesis 3a 89

Results 89

Discussion 90

Hypothesis 3b 91

CHAPTER PAGE

Results 91

Discussion 93

Hypothesis 4a 94

Results 94

Discussion 95

Hypothesis 4b 97

Results and Discussion 97

VIII. SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Summary 103

Conclusion 106

Implications 107

Recommendations 108

BIBLOGRAPHY 110

APPENDICES

A The Calming Response 118

B The Stimulus-Response Inventory of Anxiousness 120

C The Self-Esteem Scale 125

D The Sensation Seeking Survey, Form V 127

E Pre and Post Canoe Trip Questionnaires 132

F Logbook Format 136

G International Scale of River Difficulty 139

H Sensation Seeking-Anxiety State Test 141

I Pre and Post Kayak Course Questionnaires 143

J Definitions of River Terms 149

K The Kayak Course Outline 151

CHAPTER		PAGE
L	Chico's Logbook	153
M	Bruce's Logbook	157
N	Joanne's Logbook	162
O	Karen's Logbook	167
P	Responses To The Pre-Post Canoe Questionnaires .	172
Q	Responses To The Pre-Post Kayak Questionnaires .	178

LIST OF TABLES

		PAGE
Table 1 -	Comparisons Between Experimental and Control Groups in Trait Sensation Seeking, Trait Anxiety and Self-Esteem	49
Table 2 -	Comparisons Between Pre and Post Tests in Trait Sensation Seeking, Trait Anxiety and Self-Esteem	50
Table 3 -	Calculation of Spearman's Rank Correlation with Dependent State Sensation Seeking, State Anxiety and Heart Rate with Trait Sensation Seeking and Trait Anxiety	84
Table 4 -	Means, Standard Deviations, and Associated Probabilities for Comparisons Between Pre and Post Mearsures of State Sensation Seeking	90
Table 5 -	Means, Standard Deviations, and Associated Probabilities for Comparisons Between Pre and Post Mearsures of State Anxiety	92
Table 6 -	Means, Standard Deviations, and Associated Probabilities for Comparisons Between Pre and Post Mearsures of State Heart Rate	92
Table 7 -	Degree of Discrepancy Between Pre and Post Tests For High and Low Sensation Seekers' State Anxiety (SA) and State Heart Rate (SHR)	96

CHAPTER I

Introduction

Need for the Study

Outdoor adventure activities were once thought of being irrational life-threatening stunts primarily enjoyed by risk seekers and daredevils. In the past fifteen years however, adventure-based activities have attracted a much greater diversity of customers. More people are now taking part in thrill seeking pursuits like river canoeing, whitewater kayaking, rock climbing, hang gliding, downhill skiing (Ewert, 1985; Lanier, 1983; Swinnerton, 1982).

With more participants involved in "risk recreation" every year, it is crucial that organizations who seek to meet their customers' needs for adventure, be able to identify and assess individual needs for adventure and thrill seeking.

Several theorists support the notion that different people have very particular levels of optimal arousal (Zuckerman, 1978, Fiske and Maddi, 1961). They suggest that a person regulates his level of arousal like a thermostat; too little stimulation leads an individual to increase stimulation (perhaps by taking part in risk-taking activities) while too much stimulation (as in sensory overload) rouses the person to behave in a stimulation reduction mode. As with the home heating analogy, the customary comfort zone (optimal range of activation) for some people may be high, consisting of a need for change, variety, and unpredictability while for others, a secured future with a daily routine and a moderate range of arousal may be preferred. Zuckerman (1979) labels both types of individuals as high and low sensation seekers respectively on a bipolar continuum.

The increased popularity of outdoor adventure activities has provided Outdoor agencies and organizations with customers equipped with very diverse needs and skills. In most outdoor training centres, the onus of deciphering the participants' needs and skill levels is placed on the instructor. Generally, people with varying levels of ability are easily accommodated. Yet, difficulties arise when the instructor attempts to scan and satisfy each individual's particular need for sensation seeking without inducing feelings of terror in the lower sensation seekers. As of yet, very little research has been done in this area.

A developing body of research suggests that relaxation techniques can significantly alter people's levels of activation. While many effective relaxation techniques exist (Progressive Muscular Relaxation, Self-hypnosis, Transcendental Meditation, etc.) most of them require a proper choice of surroundings, a passive attitude and twenty to thirty minutes of practice every day for several weeks before any significant improvement can be noticed (Pasek and Daniel, 1983; Everly and Rosenfeld, 1983; Everly, 1979 b). Although these methods have generated positive results in people's ability to cope with stress, such procedures do not appear very convenient in outdoor adventure programs for the following reasons:

1) Outdoor adventure agencies may not want to consider allocating time for students and instructors to practise a relaxation procedure 15 to 20 minutes, twice a day due to time constraints.

2) Arousal reducing techniques might clash with high sensation seekers' needs for a greater intensity of arousal. Research by Zuckerman, (1979) has shown that high sensation seekers do partake in

relaxation techniques yet their commitment to train regularly is usually of a short duration. They also tended to quit more often than low sensation seekers. Consequently, if relaxation techniques are being imposed on the a group, some customers (higher sensation seekers) may feel cheated of potential skill learning time.

3) Most relaxation techniques improve people's general level of coping ability in dealing with stress (Schwartz, 1980), yet quite often anxiety-provoking issues in adventure activities occur within a matter of a few minutes (ie. a novice kayaker spotting some class III rapids up ahead as he floats down a canyon). In such cases, meditation, self-hypnosis, and other time demanding techniques would not appear to be readily effective on the spur of the moment. Consequently, efforts were made to find a stress reduction technique that would provide relief from excessive stress within a matter of a few minutes.

In the late 1970's, Everly, (1979 a) introduced a relaxation technique which required only 60 seconds to perform. The so-called "Calming Response" is readily accessible in a variety of stressful situations and can be easily learnt (see appendix A). It combines two stress reduction techniques - autogenic phrases and paced abdominal breathing, - that have shown positive results on their own (Carruthers, 1979; Luthe, 1965; Harris et al., 1976; Everly and Rosenfeld, 1983). In order to substantiate the effectiveness of his technique, Everly performed two experiments.

In both of Everly's studies, statistically significant reductions were noted in muscle tension, blood pressure, and state anxiety, however very few studies have researched the effectiveness of the Calming Response both in field and laboratory settings. It was the

intent of the researcher to investigate the effects of the Calming Response to sudden stressors encountered during a three day novice white water kayak course. Hence, it should be emphasized that the nature of this study was primarily exploratory. The author was aware of the numerous uncontrollable variables. Accordingly, efforts were made to minimize as many of them as possible without seriously intruding on the natural processes of an introductory white water kayak course setting.

Statement of the Problem

The central purpose of this research was to investigate the effects of a quick and easy-to-use relaxation technique on "thrill seekers" (novice white water kayakers) during a three day white water kayak course.

Several sub-problems emanate from this central purpose with respect to white water thrill seekers. They are the following:

1) To inquire into the effects of the wilderness environment on thrill seekers, with respect to self-esteem, sensation seeking, and anxiety traits.

2a) To investigate the relationship between subjects' trait and state anxiety.

2b) To investigate the relationship between participants' trait sensation seeking and state anxiety.

2c) To investigate the relationship between subjects' state heart rate and state anxiety.

2d) To investigate the relationship between participants' state sensation seeking and state anxiety.

3) To inspect the differences in risk appraisals between

subjects.

4a) To investigate the effects of relaxation training on subjects' levels of state sensation seeking.

4b) To investigate the effects of relaxation training on participants' levels of state anxiety and state heart rate.

5a) To compare high and low thrill seekers with respect to the difference between pre and post state test following the relaxation technique.

5b) To compare high and low thrill seekers in the way they value the relaxation technique during an adventure activity.

Justification of the Study

The study was justified on the following grounds:

1. In recent years, great many participants have emerged in outdoor adventure recreation. As a result, this trend has provided outdoor agencies and organizations with customers with a variety of needs and abilities. Generally, most outdoor training centres burden outdoor instructors with the task of deciphering participants' wants and skill levels. By and large, clients of differing technical abilities are readily accommodated. However, hardships appear when instructors endeavor to scan and tailor their efforts to each customer's unique need for thrill seeking without provoking feelings of terror. So far, very few studies have delved into this field of research.

2. When dealing with outdoor adventure activities, it is recommended that apparent danger be the core of adventure rather than real danger (Mortlock, 1978). In some instances, participants become anxious of a perceived danger when in fact little real danger exists. Occasionally, the client's reluctance to follow the group through a perceived

threatening task may cause complications for group adherence and the single instructor. A quick relaxation technique may reduce the stressed individual's arousal to a more workable level.

3. Techniques useful for reducing people's arousal levels are numerous, ranging from simple forms of meditation to complex and highly sophisticated biofeedback models. Many of these techniques unfortunately suffer from high drop-out rates (Everly, 1979b). The main problem seems to be that North America's "fast-paced" society is not ready to invest a substantial amount of time and effort in a process for which no immediate results appear. With a quick and easy-to-learn relaxation intervention, individuals may be less annoyed with the initial short time commitment of 60 seconds and therefore may apply it more frequently.

4. Unlike many other relaxation techniques, the calming response takes only 60 seconds to perform and thus can be used at the onset of a stressful situation. The calming technique, consisting of Autogenic training and Paced Abdominal Breathing is relatively readily applicable (Winslow and Stevens, 1983; Everly, 1979b). There are several reasons for believing that the "Calming technique" may be an effective means of controlling responses to high levels of perceived stress:

I/ Research has shown that respiration has a strong influence on heart rate (Schulte and Abhyanker, 1979; Freeman et al., 1986; Holmes, McCaul, and Solomon, 1978). In view of this relationship, it may be that by controlling respiration, other stress related psychophysiological responses might be brought under control.

II/ Several authors (e.g. Rama, Ballentine, and Hymes, 1981; Singh, Govindarajulu, and Dhanaraj, 1986) have remarked that paced

abdominal breathing is an important element of the meditation modes that are professed as being effective for reducing psychophysiological arousal.

III/ If people were less physiologically aroused because of the calming technique, fewer cues would provoke anxiety thus resulting in a healthier and a more receptive frame of mind when confronted by a perceived threatening situation.

IV/ Finally, some researchers in high-risk adventure have hinted that regulated breathing may be an effective way of controlling autonomic arousal and anxiety. Barton (1978) explored the relationships between experience, autonomic arousal, anxiety, and performance in hang glider pilots. The results illustrated that experienced glider pilots coped more easily with pre-flight anxiety and in-flight fear than the novice glider pilots. Barton also found that increases in breathing rate beyond the pilots' customary level had debilitating effects on performance. Consequently, Barton suggested that voluntary control of breathing be utilized in future high-risk activities as a means to achieve optimal arousal and performance.

Operational Definitions of the Terms

For the purpose of this investigation the following operational definitions were used:

Activation: The level of general attention in relation to environmental stimuli on the one hand, and cerebral processes on the other . . . The organism is continually in varying states of activation (Eysenck, Arnold, and Meidi, 1972, p. 20).

Activation Discrepancy: This refers to the difference between the optimal level of activation and the actual level of activation.

Actual Level of Activation: This level refers to the person's current assessment in intensity, meaningfulness, and variation of a stimulation at a specific point in time.

Adventure: A state of mind that begins with feelings of uncertainty about the outcome of a journey and always ends with feelings of enjoyment, satisfaction, or elation about the successful completion of that journey (Mortlock, 1978, p. 3).

Anxiety: The "unpleasant experience when the object is unknown and the anticipation of being overwhelmed by an internal or external force is present ...." (Zern and Stern, 1986, p. 224).

Anxiety (State): The transitory emotional state of condition of the human organism that varies in intensity and fluctuates over time (Spielberger, 1972, p. 39).

Anxiety (Trait): Relatively stable individual differences in the disposition to perceive a wide range of stimulus situations as dangerous or threatening, and in the tendency to respond to such threats with state anxiety reactions (Spielberger, 1972, p. 39).

Optimal Level of Activation: This level of activation results from day to day similarities in the intensity, meaningfulness, and variation of stimulation from all sources of a person's existence. These normal levels of activation are "an averaging-out of the highs and lows that occur in a person's life, day by day (Alderman, 1974, p. 173).

Arousal: The somatic correlates of activation and its effects on the circulatory system, the muscular system, and etc. It refers to manifestations of activation in various parts of the organism. Arousal provides feedback to the activation level, either by exteroceptive, interoceptive or cortical channels (Fiske and Maddi, 1961).

Drive: Any strong stimulus that impels an organism to action (Hergenhahn, 1984, p. 205).

Fear: The normal unpleasant feeling of uncertainty essential to the start of an adventure experience within Outdoor pursuits (Mortlock, 1978).

Impact: The total of the nonspecific effects of all stimuli from all sources at a point in time. It includes the three distinct properties of intensity, meaningfulness, and variation. The impact of a stimulus is its momentary contribution to the activation level of an organism. Its major sources are by the exteroceptive, interoceptive, and the cortical stimuli (Fiske and Maddi, 1961).

Perceived Risk: The level of danger that a participant believes he is encountering, although the situation will not lead to physical and psychological harm. This may be due to a lack of experience with the challenge resulting in fear.

Real Risk: A situation where one major error or several minor flaws may cause physical and/or psychological harm.

Sensation Seeking: (Synonymous with Thrill Seeking and Stress Seeking) A trait defined by the need for varied, novel, and complex sensations and experiences and the willingness to take physical and social risks for the sake of such experiences (Zuckerman, 1983, p. 37).

State: A predominance of characteristic types of strong, positive affect feelings in situations of great novelty and risk (Zuckerman, 1979, p. 11).

Trait: The tendency to experience the relevant state and behave in a specific manner on many occasions in many situations. An individual's mean level of states over times (Zuckerman, 1979, p. 115).

Organization of the Study

Chapter I indicates the need for the study, states the problem, justifies the research, and provides the operational definition of terms.

Chapter II consists of the review of literature pertaining to the author's theoretical base, the construct of sensation seeking and anxiety followed by the relationship between sensation seeking and anxiety. Also, the literature review overviews stress management and focuses on the foundations of the calming response; a state relaxation technique.

Chapter III presents the methodology, the objectives and physical setting of the trip, the hypothesis, study design, procedure, instrumentation, delimitations, and limitations of study I.

Chapter IV examines the results and discussion of the data found in study I.

Chapter V delineates the methodology of study II in the same manner as chapter III. Also included are a detailed overview of the three-day white water course through the eyes of its participants.

Chapter VI shows the results and provides a discussion of study II.

Chapter VII contains a summary of the research and presents the conclusions, implications and recommendations.

CHAPTER II

Review of the Literature

Introduction

A body of research in the area of sensation seeking has proliferated in the past 15 years. Numerous studies have explored sensation seeking and its operational definitions, its relationships with anxiety, its continuum of high and low thrill seekers, yet few experiments have delved into the field of stress management for optimizing sensation seeking. The following review of literature will present numerous studies which will lead to a better understanding of how a relaxation technique can regulate individuals' levels of arousal to a more appropriate intensity. This will be outlined in a fivefold manner. Initially, a theoretical framework will be established. Secondly, the concept of sensation seeking will be examined. Thirdly, a global look will be taken at stress management. Fourth, the relationship between sensation seeking and state/trait anxiety will be presented. Finally, a state relaxation mode will be investigated.

Theoretical Framework

For centuries, researchers have attempted to explain the psychological phenomenon of personality. Numerous theories were brought forth in hopes of clarifying it. Out of the many conceptual frameworks, three fundamental categories were identified (Alderman 1974):

1. The conflict model assumes that people live in continuous conflict between id and the superego, in that the id is constantly seeking to satisfy instinctual needs whereas the superego is forcing the id to confine itself to the demands of society (Herganhahn, 1984).

2. The fulfilment model suggests that a person seeks to follow a linear path toward goodness. Two major drives exist within an individual; the push to fulfill the need for psychological survival and the push toward self-actualization (Alderman, 1974).

3. The consistency model pictures an individual as being in constant search for homeostasis. This is done by continuously adjusting oneself according to internal and external feedback and expectancies (Fiske and Maddi, 1961). Gradually the constant adjusting becomes a trait or an averaging out of behaviours across situations and time (Baker, 1985).

In comparing the three models, the conflict model suggests that people generally try to reduce their levels of arousal in order to satisfy their physiological needs whereas the fulfilment model mentions that individuals prefer stability, safety and predictability of self-realization. The consistency model, on the other hand, suggests that some people may enjoy novelty, complexity, and uncertainty while others may prefer to avoid novelty and maintain set routines. Consequently, individuals not only have a need to reduce their arousal level but to increase it as well.

Within the broad realm of personality, a phenomenon exists where individuals may seek excitement, adventure and stress at given times (ie. rock climbers abseiling from a steep escarpment) while at other moments, the same person may want to engage in low activity games like golf. The author employed a theory within the consistency model.

Level of Activation Theory

In 1961, Fiske and Maddi published a book entitled "Functions of Varied Experience" which described their theory of personality. It dealt with people's ability to maintain a consistency between an optimal level of activation that is common to their everyday life and their actual activation level. The individual continuously attempts to minimize any discrepancy existing between his customary or optimal level of activation and his actual level of activation. If for instance, an individual was hospitalized and could not get out of bed for a lengthy period of time, attempts would be made to seek situations or objects that tend to increase arousal (ie. read a suspence-thriller, watch an adventure-based movie). Yet a person like an air traffic controller, who is constantly in situations of stressful decision-making, might tend to seek activities of low arousal (ie. play a recreational game of golf, go fishing).

As with the idiosyncrasies of people, one may have a higher or lower optimal range of activation than the average population. Individuals considered high will tend to search for change, variety, and unpredictability while for others, preference for a daily routine, a secured job where predictability and structure are high.

If the former was in a low level of stimulation, the novelty seeker would find this situation annoying and thus would try to avoid it. As well, if the latter was in a high state of unpredictable arousal, attempts would be made to shun away from the situation in hopes of maintaining a lower arousal level (Donnelly and Birrell, 1978).

Not only do people have preferences in activation levels but their optimal levels of activation also fluctuate in a parabolic wave-like

pattern everyday (Fiske and Maddi, 1961). People's optimal level of activation follow a diurnal cycle in which the arousal level tends to be lower when people wake up or go to bed than during mid-morning or midday. For instance, if stressful mountaineering route decisions needed to be taken as soon as the leader awakened, the discrepancy between his optimal level and actual level of activation at that particular time might be substantial. Therefore the person might not deal with the situation as effectively as he might have in midday.

Discrepancies in Activation Levels

Stimuli causing a discrepancy in activation level are numerous. Fiske and Maddi (1961) categorize them into three sources:

1. Exteroceptive sources which include feelings of arousal felt by any of the 5 senses.
2. Interoceptive sources consisting of the excitation of internal organs (muscles, heart, bladder, lung, etc.).
3. Cortical sources causing the cortex of the brain to be innervated.

Any of these three sources may cause a significant impact on an individual. This impact is characterized by its degree of meaningfulness, intensity and variation of the stimulus. For instance, intensity can be compared to the flame from a match which may frequently go unnoticed in a crowd of people yet if the ignited match was accidently dropped in a waste paper basket containing highly flammable chemicals, the larger blaze would be readily noticed. The burning basket would become more meaningful if it began rolling toward some stores.

The degree of variation is further sub-divided into three

dimensions: Change, Novelty and Unexpectedness (i.e. people leaving their safe and secure home to visit countries of the third world unaware of what to expect).

In general, Fiske and Maddi (1961) suggest that people try to remain at a comfortable intensity of stimulation with the least amount of discrepancy between their optimal level and their actual level of activation. If this is not possible, then individuals go into an impact modifying behaviour. This prompts the person to either take part in an impact increasing behaviour (eg. higher risk activities) or in an impact decreasing behaviour (eg. less stressful activities) so as to achieve an homeostasis. Such activities employed to modify people's impact on behaviour may be effective "... only up to a point, beyond which habituation may attenuate the effects" (Fiske and Maddi, 1961, p. 90). For instance, a woman employed on a production line in a factory might feel the need to increase her level of arousal. Consequently, she may decide to learn how to rock climb. For the following few months, this new high risk activity restores her activation level very quickly. But after a while, the same climbs at the same intensity become insufficient in elevating her activation level. To that effect, she begins to pursue new and more intensive climbs that will make her feel invigorating. This degree of difficulty will be maintained until she can no longer reduce her discrepancy sufficiently with that particular activity.

In essence, the woman has reached a level of adaptation or habituation where her optimal level of activation has shifted upwardly. Therefore, higher risk pursuits are needed to satiate the same discrepancy as before. Some researchers attribute these upward or

downward shifts in optimal arousal levels to "the raising or lowering of cortical activation with the increase or decrease of stimulation . . ." (Zuckerman, 1979, p. 92).

As with the example of the rock climber, some people gradually get involved into more dangerous activities. Yet, others frequently appear to engage in pursuits (i.e. hang gliding, skydiving, mountaineering, ice climbing) that are termed risky and, at times, life threatening to most people. Consequently, in the early 60's, a developing body of research emanated in high risk seeking.

Sensation Seeking

For some people there is not enough satisfaction in golfing, fishing, bowling or just hiking a well-groomed trail. Some prefer to climb vertical rock cliffs, kayak over waterfalls or skydive from tall buildings. According to the activation theory, such people have a very high comfort zone in arousal needs, hence they seek high risk activities to maintain an optimal level of arousal.

Zuckerman (1979a) suggests that the pursuit of risky situations be labelled "sensation seeking" and that it be considered a bipolar continuum with high and low sensation seekers. In comparing high and low sensation seekers, several differences are discerned. The high sensation seeker is one who has a "need for varied, novel and complex sensations and experiences and the willingness to take physical and social risks for the sake of those experiences" (Schierman and Rowland, 1985, p. 599) while low sensation seekers have a distinct aversion to such risks. These risks can be both physical and/or social. Zuckerman (1971) developed a sensation seeking scale of 40 items that identified the extent of risk people seek. Four subscales were represented:

Thrill and Adventure, Experience Seeking, Disinhibition and Boredom Susceptibility. Although some individuals rate very high on one subsection (Thrill and Adventure seeking), Zuckerman theorizes that, in general people are likely to have high scores on the other three subsections as well. From these categories, numerous distinguishing features exist between high and low thrill seekers.

High sensation seekers tend to be more ". . . sensitive to their internal feelings and, as a result, select external stimuli that maximize them" (Zuckerman, 1979a, p. 10). It was found that the high sensation seekers were more successful at focusing attention, yet worse at distributing attention (Martin, 1985). In considering activities such as white water kayaking and rock climbing, it seems clear that high sensation seekers must focus their attention entirely toward what they are venturing otherwise a fatal mistake may result. Interestingly enough, Farley (1986) asserts that high thrill seekers are "transmutative thinkers". In other words, they are individuals with an to another. Thrill seekers can "move with greater ease from abstract to the concrete and back than Little t's"(low thrill seekers) (Farley, 1986, p. 47).

High sensation seekers tend to be more alert and show higher levels of arousal in response to novel stimuli (Martin, 1985). Although high thrill seekers were more alert, low sensation seekers were more quickly startled, as measured by heart rate when loud sounds were heard unexpectedly (Ridgeway and Hare, 1981). At this moment however, some controversial findings exist between the relationship of sensation seeking and cardiac rate (Schierman and Rowland, 1985).

When high and low sensation seekers appraise a risk the same way,

the high thrill seekers tend to perceive the task with more pleasure than anxiety, while the low sensation seekers tend to experience an excess of anxiety (Zuckerman, 1978).

As a brief summary in comparing high and low thrill seekers, Farley (1986, p. 48) listed the arousal values of stimulation for both personalities:

THE AROUSAL VALUE OF STIMULATION

High Arousal Value (Big T's Prefer)	Low Arousal Value (Little t's Prefer)
Uncertainty	Certainty
Unpredictability	Predictability
High Risk	Low Risk
Novelty	Familiarity
Much Variety	Little Variety
Complexity	Simplicity
Ambiguity	Clarity
Flexibility	Rigidity
Low Structure	High Structure
High Intensity	Low Intensity
High Conflict	Low Conflict

With such diversity between high and low sensation seekers, some theorists speculate that high arousal pursutists originate in several ways. An individual's level of activation is the result of an accumulation of dynamic experiences, thought by some theorists to be determined by the individual's environment (Groves, 1987, Farley, 1986). According to the activation theory, sensation seekers have a high optimal level of activation stemming back from their family and peer environment as a youth (Farley, 1986).

Numerous researchers support the theory of Optimal arousal, yet they profess that high thrill seekers are genetically pre-determined as opposed to the result of their environment's influence (Zuckerman, 1979; Groves, 1987; Farley, 1986). Studies have indicated that sensation seeking is directly related to the electrodermal orienting reflex, cortical reactivity and certain biochemical correlates

(Furnham, 1984). Zuckerman (1979a) acknowledges that the environment may have a certain influential role as to whether a person becomes a high or a low sensation seeker. For instance, he states that if a moderate sensation seeker is participating with people who engage in highly risky activities for an extended period of time, the moderate thrill seeker will adapt by increasing or decreasing his optimal level of activation. If both alternatives are not possible, anxiety may begin to dominate.

In a similar case, high sensation seekers will also differ in thrill seeking intensity because of their idiosyncrasies. As Donnelly states, "All individuals need varying environmental stimuli that are to some extent novel, complex, or uncertain, and which produce pleasurable levels of arousal" (1978, p. 25). As a result, a highly stressful activity may go beyond the optimal level of activation for some high tension seekers. Thus, anxiety becomes the primary affect. In situations where clients take part in high risk activities, anxiety may become a major concern. The unpleasant emotions sustained during an anxiety state can influence ". . . physiological (i.e., skin conductance, muscle tension) and cognitive processes (i.e., loss of concentration)" (Snyder, 1982). To that effect, loss of concentration and excessive muscle tension while performing activities such as white water kayaking and rock climbing may have serious consequences.

Due to the importance and pertinence of anxiety in this research, anxiety will be further defined and briefly explained.

Anxiety

The concept of anxiety is one which has been frequently investigated in the past several decades although little or no

agreement has been reached on its definition. In order to better understand the breadth of anxiety, founding studies in this field were examined.

The modern pioneer of this concept, Freud (1936) purported that anxiety was "something felt", a fundamentally unpleasant affective state or condition. With such a vague definition of anxiety, numerous types of feelings could qualify as being anxiety. Thus, Spielberger and Sarason added to Freud's meaning of anxiety by professing it to be a "complex sequence of cognitive, affective, and behavioural events that is evoked by some form of stress" (1975, p. 137). This statement better qualified the conceptual word yet the definition remained somewhat nebulous. Accordingly, an alternative meaning of anxiety was accepted. The definition proposed by Eidelberg delineates anxiety as being "the unpleasure experience when the object is unknown and the anticipation of being overwhelmed by an internal or external force is present . . ." (Zern and Stern, 1986, p. 224). In this form, the meaning of anxiety becomes synonymous with a high level of fear. For the purpose of this research, Eidelberg's definition of anxiety was utilized.

Before discussing the application of the "anxiety" definition and its effects, it was necessary to identify accompanying symptoms of high anxiety. For the sake of clarity, Snaith (1986) subdivided symptoms into the three most likely domains from where the manifestation of anxiety is likely to originate. They consisted of the purely psychic experience which involved worrying and fear of failure caused by ego threatening situations (Snaith, 1986; Endler, 1975).

The second group dealt with the autonomic referencing of anxiety,

such as increased heart palpation, disturbance in respiration, muscular tension, profuse sweating, tremor and shuddering, diarrhea, frequent micturation, and vertigo (Freud, 1936; Snaith, 1986).

The third domain combined the perceived psychic experience and the somatic reference of anxiety which included subjective feelings of nervous tension, restlessness, and hypersensitivity (Snaith, 1986).

All three domains of symptoms assisted in identifying anxiety, yet researchers point out that confusion occurs as a result of not distinguishing between state and trait anxiety (Endler, 1975).

In an attempt to clarify the concept of anxiety, Endler and Okada (1975) discriminated between situational anxiety (state anxiety) and anxiety proneness (trait anxiety). Situational anxiety (A-State) is an evanescent state felt by an individual in response to a stimulus which is likely to vary from one moment to another. Anxiety proneness (A-Trait) is generally a stable personality characteristic which entails a "person's disposition to perceive a wide range of situations as threatening and to respond to these situations with differential elevations in state anxiety" (Spielberger and Sarason, 1975, p. 137). As a result, numerous studies have found that high A-Trait people will tend to relate to situations with a higher level of A-State than someone with a low A-Trait (Teichman, Rafael and Lerman, 1986, Donat, 1983; Klavora, 1974).

However, some controversy exists with respect to the A-State A-Trait relationship. Endler (1973) implies that the possibility of predicting A-State from a high A-Trait is not as clear-cut as it may seem. In a study, Endler and Shedletshy used the Stimulus-Response Inventory of Anxiousness as a trait anxiety measure and the STAI

A-State scale by Spielberger to measure state anxiety (Endler, 1973). Their results showed that both "threat of failure (ego threat) and threat of shock (physical threat)" elicited state anxiety, yet only the physical threat condition pertained to the A-State and trait anxiety relationship. In other words, it was possible to predict a subject's level of state anxiety only when high A-Trait participants were faced with situations of physical danger. However, studies have shown that trait anxiety did not seem to predict fear responses in anticipation of surgery (Zuckerman, 1977).

Various investigators have noted that high states of anxiety could not be predicted more with high trait anxiety than with low trait anxious subjects (Payne, 1983). It seems that trait anxiety can not accurately predict a person's level of state anxiety at any given day because studies are ignoring ". . . the situational factors that influence the states of persons on any given day of their lives" (Zuckerman, 1977, p. 514). Others have elucidated that trait anxiety not only consists of one factor but of three equally important sections. In effect, researchers must be aware of the environmental factors eliciting anxiety, individual differences and the interaction between both (Endler and Okada, 1975). Teichman et al. (1986) performed a study about the anxiety reaction of hospitalized children (aged 6 to 12) which supported this notion. They found that high A-Trait children who perceived their mother to be anxious reported to possess a high A-State while a second group of high A-Trait children who viewed their mother as low anxious, demonstrated the same level of anxiety as the low A-Trait youngsters. Numerous studies have attempted to unravel the complexities of the A-State and A-Trait

relationship yet the vastness of this concept merely results in more queries.

In order to better fathom the phenomenon of anxiety, Freud characterized it as neurotic and objective anxiety (Spielberger and Sarason, 1975). Neurotic anxiety consists of the individual's own internal perception of a situation, while the latter is based on the provenance of danger existing in the real external world. Neurotic anxiety is a danger signal, yet the source of danger emanates from the individual's subjective appraisal of a situation. Freud (1959) regards anxiety-neurosis as a collective term encompassing several forms, among them hypochondria and self-helplessness.

Objective anxiety, unlike neurotic anxiety, has the same connotation as fear, a complex internal reaction to an anticipated injury or harm from "real danger" (Freud, 1963). The intensity of objective anxiety increases equally to the magnitude of the external danger.

The emphasis of this present study, albeit interested in both types of anxieties, deals mostly with people's neurotic anxiety (appraisal of the riskiness of a situation) rather than their objective anxiety for the following reason. Mortlock (1978), in his involvement with the Centre of Adventure Education (in the United Kingdom) recommends that outdoor organizations and agencies satisfy their clients demands with activities of high apparent danger rather than with high real danger primarily because outdoor sensation seekers pursue adventures. Adventures are a state of mind dealing with feelings of uncertainty about how the pursuit will turn out and it normally ends with feelings of enjoyment or elation for having completed one's exploits (Mortlock,

1978). Meaningful challenges are among the ultimate necessities for providing an adventure yet, Mortlock reminds outdoor organizations of the following: "Without the fear there would be no challenge. Fear extended to terror, however, is not adventure (p. 9).

Consequently, outdoor enterprises are faced with the task of challenging individuals who have similar skill levels with the same activity with greatly varying levels of sensation seeking while avoiding excessive fear.

Sensation Seeking and Anxiety

A great deal of attention has been focused on the increasing numbers of risk recreation participants. More adventurists are enrolling in high risk pursuits now than ever before. For outdoor agencies providing such activities, they must deal with varying levels of people's sensation seeking and anxiety states. As of yet, only a minimal amount of research has attempted to interpret the relationship of these states per se.

Segal (1973) sought to determine if a relationship existed between sensation seeking and anxiety levels. To do so, he employed the Sensation Seeking Survey (Form IV) and the Stimulus-Response Inventory of Anxiousness. After inter-correlating both instruments, sensation seeking behaviour was found not to be accompanied by a heightened state of anxiety.

Blankstein (1975) performed a sequel to Segal's study and hypothesized that people high in sensation seeking would be low in anxiety reactivity involving elements of physical danger or social embarrassment. The Sensation Seeking Survey and the Lykken's Activity Preference Questionnaire were administered to 83 male and female

college students. The results showed that high sensation seekers were low in anxiety reactivity which involved elements of physical danger and social fears associated with embarrassment.

Zuckerman (1979b) describes this "cutting edge" with a model depicting the relationships of sensation seeking and anxiety states. He suggests that state anxiety varies directly with an individual's risk appraisal of a situation. State sensation seeking however, varies according to perceived risk in a curvilinear manner. In effect, the strength of a person's drive toward sensation seeking will intensify until it reaches an optimal range of arousal. Beyond this level, the individual tends to withdraw from the novel and unpredictable situations.

In addition, arousal represented by heart rate was found to be almost linear in function of performance and induced tension (Davey, 1973). In other words, a higher heart rate occurred as a result of greater induced tension whether it be positive or negative.

A developing body of research suggests that relaxation techniques can significantly alter people's levels of activation to a more workable range.

Stress Management

A considerable amount of research has been devoted to studying procedures by which people could control their physiological and psychological levels of activation during stressful situations. As a result, numerous stress management techniques have evolved. For the sake of simplicity, the vast array of techniques is divided into two distinct units:

a. Personal and social planning techniques referring to

situational modifications such as reducing the effect of the stressors and creating a more workable environment.

b. Relaxation techniques relying on changing the individual's perception and reaction to the environment (Schwartz, 1980; Seamonds, 1982).

For example, the first category involves such procedures as assertiveness training programs, guided mental imagery, role playing, nutrition, exercise, sleep and time management (Schwartz, 1980; Gieck, 1984; Cedoline, 1982). These strategies help the individual maintain a sound level of mental health so that he or she is more competent at manipulating and decreasing the intensity of surrounding nefarious stressors.

Unfortunately, stressor management is not always sufficiently appropriate. As a result of this inadequacy, relaxation techniques are introduced. The second category consists of such interventions as meditation, hypnosis, progressive relaxation, autogenic training, biofeedback, yoga, and regulated breathing (Ivancevich and Matteson, 1980; Schwartz, 1980; Everly and Rosenfeld, 1983). These procedures, among many others, help the individual cope with an environment that can not be changed (i.e. a manager's temper at work, weather conditions, highway traffic jams).

Clients searching for stress intervention techniques can be generally discerned as either seeking relief from psychosomatic illnesses or wanting to improve their general level of coping ability and wellness. Several studies have shown that stress interventions, in general, have brought positive benefits in therapeutic as well as in overall wellness situations (Schwartz, 1980; Heinrich and Schag, 1985;

Frederiks, 1980).

Clinically, Benson, Kotch, and Crasaweller (1977) observed very positive results when they conducted an experiment with 86 medically hypertensive subjects. After two weeks of meditating twice a day, the investigators found that 50 of the original group were no longer hypertensive. Other studies found that patients reduced their drug requirement by 41.9% when the subjects were treated with Yoga and biofeedback techniques. Frederiks (1980) notes that hypnosis greatly reduces perceived stressors that new patients might have such as going to the dentist or the fear of surgery.

In regards to wellness, Geron (1983) suggests that healthy people pursue psychological techniques for two reasons: a) To improve the participant's mental health, b) To improve performance. Frew (1977, p. 147) noted several beneficial results when he studied the effects of Transcendental Meditation in an occupational setting. He concluded that Transcendental Meditation (TM) was instrumental in employees' improved performance due to the following results:

1. An increase in job satisfaction.
2. An improved output.
3. A reduction in job turn-over.
4. An improvement in the manager-worker relationship.
5. An enhancement in co-worker relationship.
6 A lower motivation to climb the hierarchy

Pasek and Daniel (1984) mention that the use of Relaxation - Concentration Training is frequently employed by the Polish national-calibre athletes. This technique is similar to a form of yogic gymnastics involving the execution of diverse movement routines.

Numerous studies have shown positive results with diverse relaxation techniques (Schwartz, 1980). Some research, however, has left some room for doubt in that such relaxation manners are not always reliably effective. Henrich and Schag (1985) found that relaxation techniques were not an effective coping strategy for chronic cancer patients. Benson et al. (1977) noted that regular elicitation of Transcendental Meditation had substantial limitations when employed in the treatment of migraine and cluster headaches. Griffiths et al. (1981) in trying to ameliorate S.C.U.B.A. divers' performance, treated their subjects with biofeedback and meditation only to find that no significant improvement occurred.

Although some experiments show no improvement in performance, no literature, to the author's knowledge, has indicated unhealthy results. Everly and Rosenfeld (1983) comment on a popular misconception that if one technique works for one person, then it works for all. They suggest that people seeking relief and other benefits from relaxation technique, be aware of people's individual idiosyncrasies. Pasek and Daniel (1983) note that the success of a quieting response is contingent on three factors:

1. Regular practice of the technique.
2. The proper choice of surroundings.
3. Assurance on acquiring the correct technique.

Everly and Rosenfeld (1983) remark that the subject should have a passive attitude for allowing proper relaxation to occur. The preceding suggestions appear instrumental at achieving a successful state of relaxation yet many techniques sustain high drop-out rates (Everly, 1979). Some studies suggest that the "fast-moving pace" of

our Western society does not allocate time for people to practise a relaxation process. For instance, Transcendental Meditation requires the participant to practise for 20 minutes twice a day (Stanké, 1976); Progressive Neuromuscular Relaxation, Autogenic Training, Biofeedback and Self-Hypnosis also require the same time allocation (Everly and Rosenfeld, 1983, Allen, 1983). Consequently, some beginners find it too time consuming to continue. Also, newcomers quickly get discouraged because improvement is not readily noticeable (Everly, 1979; Zuckerman, 1978). Myriads of relaxation procedures exist, yet studies have shown that most techniques require time and commitment on the participant's part. Accordingly, researchers have long pursued the quest for effective quick and easy-to-use relaxation techniques. For the sake of this thesis, the following literature review will deal mostly with mentally healthy people in search for optimizing their activation levels.

State Relaxation Techniques

For many years, there have been numerous types of relaxation techniques yet most of them have required that people practise an estimated 20 to 40 minutes each day. In the late 1970's, a few quick and easy alternatives were introduced. Techniques such as the "Quieting Reflex" (Stroebel, 1978) and the "Calming Technique" (Everly, 1979) necessitate no more than 60 seconds to perform. Unlike other relaxation methods needing continuous practice, the two preceding techniques are used only when required. Hence, either technique could be utilized immediately prior to perceived threatening situations upon which the "fight or flight" response would be activated (Mason, 1975). For instance, a student finding out that he has to present a speech in

five minutes as he walks in class; two novice canoeists paddling down a seemingly harmless river within a canyon, when gradually they hear the distant roar of some rapids.

Stroebel (1978) claims that a modified version of the "Quieting Response" demands only 6 seconds to execute yet few scientific studies have been written in regards to the technique's effectiveness. The "Calming Technique" introduced by Everly (1979), takes about 60 seconds to perform. Unlike Stroebel's method, this technique stems from a combination of two well-known relaxation techniques: Autogenic Training and Paced Abdominal Breathing.

Autogenic Training

Autogenic training, emanating from hypnosis, was primarily introduced as a form of self-help based on selective awareness (Allen, 1983). This type of training makes use of two modes; mental repetition of two images (warmth and heaviness) and mental scanning designed to bring about the feeling of the two images throughout the body. Autogenic training acts as a soother to change the body's sympathetic activation during a stress response to a parasympathetic activation. In fact, it has been suggested in numerous articles that this technique is effective in relieving stress-related ailments of all kinds (Carruthers, 1979, Luthe, 1965). For instance, in one study of tension headaches, the investigators noticed statistically significant positive changes with the frequency and severity of pain. However, it was noted that a second stress management technique along with Autogenic training resulted in an even better end product (Anderson, Lawrence and Olson, 1981). Not only does it reduce tension, but some observations also show that a modified version of autogenic training is

successful in enhancing people's creativity (Diamond, 1979).

Paced Abdominal Breathing

In conjunction with Autogenic training, the "Calming Technique" includes paced abdominal breathing thus adding to the possibilities of quickly achieving a hypometabolic state.

Paced respiration is widely utilized because of its popularity as a stress reducer in a extensive variety of contexts, ranging from the Eastern practices of Yoga, Kung-fu and Tai'Chi to the Western practice of the Lamaze breathing methods during natural childbirth (Harris et al., 1976). In fact, it also represents a vital part of such Relaxation techniques as Transcendental Meditation, Self-Hypnosis, and Progressive Neuromuscular Relaxation (Everly and Rosenfeld, 1983; Allen, 1983; Charlesworth and Nathan, 1984).

The technique consists of slowly inspiring from the abdominal area through the nose; holding the breath for a few seconds and slowly expiring through the mouth (see appendix A).

During the last few decades, however, this very simplistic relaxation technique has brought forth very interesting findings. Studies have shown that regulated diaphragmatic breathing has significant regulatory effects as a trophotropic inducer in physiological and mental status (Holmes, McCaul and Solomon, 1978; Grossman, 1983).

Schulte and Abhyanker (1979) presented supporting evidence in which PRANAYAMA (a Yogic technique of paced abdominal breathing) was applied in a single subject clinical study. A 35 year old mother of three was cured of depressive episodes combined with insomnia, spontaneous crying, and weight loss. The procedure involved learning the proper

sitting position (with the spine erect), breathing slowly with exhalation and inhalation being equal and separated by a two second pause, and supportive consultation with a Yogi in an Ashram milieu (Yogic Institute). After twelve weeks of treatment, her symptoms were partially suppressed. A two year follow-up identified that the symptoms were non-existent.

Obviously, such an anecdotal observation did not control extraneous variables such as the supportive relationships of the Yogi and the milieu, the change in environment, or the natural course of illness. However, the observers believe that Pranayama was instrumental in the woman's recovery.

For centuries, most studies in Eastern countries have been performed qualitatively (Rama et al., 1976). In Western societies though, studies appear to rely much more heavily on hard core quantitative experiments. Consequently, many experiments have explored the effects of breathing by investigating whether or not respiration produces physiological and mental changes. For instance, hyperventilation causes a decrease in blood carbon dioxide producing respiratory alkalosis, numbness, dizziness, muscle cramps and frequently a subjective sense of panic (Freeman et al., 1986). Yet, slow controlled breathing yields a gradual level of accumulated carbon dioxide. In turn, it is believed to excite the cerebral circulation and activate feelings of mental tranquillity, a decreased heart rate response to a stressful situation and a reduction in sympathetic activity in the autonomic nervous system (Schulte and Abhyanker, 1979 and Freeman et al., 1986; Holmes, McCaul and Solomon, 1978). While the exact causes of hyperventilation are still speculative, the most common

contention purports that it is primarily due to a learnt upper thoracic breathing pattern (habit or response). Further research shows that predominantly thoracic breathing tends to result in greater cardiac output and heart rate whereas dominant abdominal breathing appears to cause the opposite end-product (Grossman, 1983). Therefore, the "Calming technique" by Everly (1979), consisting of paced abdominal breathing, should bring about a decreased cardiac rate and an overall quieting state.

Many experiments have been devoted to the science of breath in recent years. Among several major variables of respiration, breathing frequency is one of noted controversy. Harris et al. (1976) performed an experiment to find out if subjects who maintained a fixed rate and depth of respiration would show decreased autonomic nervous system (ANS) responses to both the physical stress of an electric shock and the psychological stress of the anticipation of electric shock. The experimenters allowed ten minutes for subjects to practise the paced respiration technique that had been taught prior to the experiment. They mention that all subjects in the experimental group learned within the ten minutes to time their breathing so that each participant inhaled smoothly throughout the four seconds that a light was on, and exhaled smoothly throughout the four seconds that the light was off. The light cycle was electronically controlled. They also state that this type of breathing becomes rather "thoughtless", requiring very little in the way of cognitive processing. Both the control and experimental group were tested by way of measuring the magnitude of electrodermal response (EDR) and heart rate with an electromyogram (EMG). The results showed that paced breathing had a significant

effect on reducing individuals' autonomic response to threatening stimuli with respect to the electrodermal response, however a significant change was not noticed with cardiac rate between participants.

Harris et al. (1976) make several daring assumptions in their study. Initially, it is assumed that each individual will be equally relaxed when they are requested to take eight breaths per minute for a number of minutes. This technique does not allow for individual differences and consequently, this in itself, may create additional stress for some participants. Instead of imposing a designated rate of breathing on the subjects, it may be more suitable for participants to choose their own slow paced respiration rate. Secondly, the researchers assume that all partakers have the same level of anxiety threshold and thereupon neglect to assess the subjects' level of trait anxiety prior to the experiment. An individual who is prone to high anxiety will tend to respond differently than a generally low anxious person (Spielberger and Sarason, 1975). Thirdly, this study presumes that the threat of shock brings about feelings of anxiety in all subjects yet no measurements of state anxiety are taken to verify if this is so. With a valid state anxiety questionnaire, the investigator is able to detect, to a certain extent, the intensity of the subject's appraisal of the imposed threat.

Holmes et al. (1978) replicated Harris et al.'s (1976) study of paced respiration as a means of controlling emotional responses to stress. However, rather than requesting that each participant take 8 breaths per minute, they determined each subject's unique resting breathing pattern and then asked them to duplicate that rate while

being confronted by the perceived threat of being shocked. The Galvanic Skin Response, cardiac rate and self-report measures were utilized to assess each subject's response to the shock threat. Their findings indicate that paced respiration is not an effective means of controlling perceived stress. Yet, to the experimenters' dismay, some apparent technical problems developed with the Galvanic Skin Response resulting in no valid measurements. Therefore, Holmes et al. (1978) based their conclusions on heart rate and self-reported measures. Accordingly, their findings are similar to those of Harris et al. (1976) in that paced breathing did not cause any changes in heart rate. However, physiological findings have suggested that breathing patterns do have an impact on cardiac rate (see earlier references on hyperventilation). Perhaps no changes in heart rate were observed because the threat of shock was not sufficiently severe to have any noticeable impact on such a robust dependent variable.

With respect to self-report measures, Cappo and Holmes' (1983) results differ from those of Holmes et al. (1978) in that paced abdominal breathing was found to be consistently effective for reducing anticipatory and confronting psychological arousal. Since it has been frequently noted that paced regulatory breathing prompts a trophotropic state (see earlier references on Pranayama), a greater control over psychological arousal would seem very plausible and thus, an appropriate relaxation technique.

The Calming Response

Similarly like the Quieting Reflex, a minimal amount of research has been done on the Calming technique per se. However, both major elements (Autogenic Training and Paced Abdominal Breathing) have been

frequently tested independently of each other and have generally been proven successful. With both relaxation techniques combined, positive outcomes resulted.

Everly (1979a; 1979b) performed two studies with the intention of investigating the effectiveness of the calming technique. The original study consisted of 40 University students randomly divided in two groups; a control and an experimental group. The 60 second technique was taught to the experimental group and they were given a week to practise. The following week, the subjects were assessed by measuring frontalis muscle tension with an electromyogram, digital temperature and blood pressure. The results showed that within the space of 90 seconds, from pre-test to post test, there was a statistically significant difference in muscle tension and blood pressure.

In Everly's (1979b) second study, 17 females and 13 males were randomly assigned into two equal groups (a control and an experimental group) and were evaluated according to pre and post tests. The experimental group was taught the "calming technique" in the form of a two-page handout prior to the testing. During the experiment, the control subjects were instructed to sit and relax for 120 seconds while the experimental group was asked to perform the designated technique. Immediately following the 120 second interval, measurements on 2 dependent variables were taken: EMG and "state" anxiety as measured by Spielberger's STAI. The results indicated that there was a significant difference between experimental and control groups with respect to the pre and post test of muscle tension and state anxiety.

In both of Everly's studies, statistically significant reductions were noted in muscle tension, blood pressure and state anxiety. Yet

both studies were performed under ideal conditions and surroundings (sitting on a chair inside a room in the absence of a stressful situation). After an extensive literature review, the author found no studies related to the Calming Response's effectiveness in a field setting with anxiety-provoking situations. Thus, in an attempt to begin to field test Everly's technique, the purpose of this present research is to investigate the effects of the Calming Response to sudden stressors encountered during a three-day novice white water kayak course.

CHAPTER III

METHOD AND PROCEDURE OF STUDY I

Introduction

The following chapter describes a two-stage process carried out in this study. Both studies were wilderness field experiments and considered quasi-experimental pre-post designs. The first experiment dealt with independent samples while the second experiment involved a correlated sample with repeated measures.

The studies were presented separately in their entirety to ensure clarity and consistency of the research. Each study was presented in the following manner: Hypotheses specific to that study, design, the statistical treatment utilized in the analysis, sample, instrumentation, the physical setting, and procedures used in data collection. At the concluding part of each study, the limitations and delimitations were addressed. The results and discussion are presented in chapter IV.

The main purpose of this research was to contrast and examine high and low sensation seekers with respect to a relaxation technique. While field research of this nature may involve uncontrollable variables, efforts were made to minimize as many of them as possible. The research was done in two stages. The first study was designed to isolate the effects of an environmental setting from the effects of a relaxation technique in an outdoor setting, specifically during a river canoe trip.

In the follow-up study, the effects of the stress intervention technique were investigated during a three-day kayak course.

The Upper Wabasca River

The outdoor environment has often been thought of as an ideal setting for recreational purposes. As well, the "outdoors" has been utilized as a natural therapeutic medium for pacifying stressed individuals and for rehabilitating juvenile delinquents by ameliorating their self-concept and self-esteem (Gibson, 1979). In fact, some researchers suggest that the out of doors in itself may have curative and remedial virtues (Tuft, 1985; Gibson, 1979).

Since the main purpose of this research is to investigate the effects of a relaxation technique on high sensation seekers during a three-day kayak course, the writer thought it appropriate to first examine whether or not the outdoor environment alone caused a change in trait Sensation Seeking, trait Anxiety, and Self-Esteem. As well, knowledge of subjects' traits was crucial for identifying the high and low sensation seekers in the second study. Hence, the writer examined the effects of the outdoor environment on subjects by way of a six-day river canoe trip. The details of this study are described in the next few pages.

Adventure courses are frequently subject to inevitable factors such as temperature, precipitation, water level, appropriateness of the setting, wind, and etc. which may enhance (added enjoyment, exhilaration) or hinder (anxiety, annoyance or boredom) effective skill acquisition. Since the main goal of this study was to examine the effects of the wilderness environment on an experimental group, it was crucial that the researcher's and experimental subjects' objectives, the physical setting, and the meteorological conditions be identified.

Objectives of the Trip

The researcher's objectives of this trip were to identify whether or not a six-day canoe trip produced an effect on sensation seeking and anxiety traits, and self-esteem. The group's objectives were simply to relax, enjoy themselves and learn more about each other. No set programs were to be followed.

Physical Setting

The North Wabasca river is located in Northern Alberta about 400 km north of Edmonton and 100 km north-east of Lesser Slave lake. It is reached via highway #67 from Slave Lake and highway #754 from Lesser Slave Lake Provincial Park. The northward flowing river was classified as an overall class II (According to the International Scale of River Difficulty; see appendix G) river with rapids ranging from class I-IV, depending on the water level. The Wabasca river's water levels was predicted by Travel Alberta to be at it lowest in late August and early September.

The Travel Alberta Reach Report recommends that canoeists possess "intermediate Open Canadian canoe skills" before attempting this river. Thus a group consensus was reached on the decision that all participants felt reasonably comfortable with the river selection.

On August 31, 1986, the experimental group set their canoes afloat at the outfall of the North Wabasca lake next to the Wabasca Indian Reserve. The six-day journey covered a distance of about 125 km. More distance would have been covered if the water level had not been so low. Hence the foretold meter high rapids by Travel Alberta were not encountered.

Throughout the entire trip the weather was generally pleasant.

Daily temperatures ranged between approximately 14 ^{0}C and 20 ^{0}C with light to moderate morning showers. A common complaint was voiced about strong head winds. During the last three days, frustrations grew as the students paddled long hours into continuous headwinds. Because of the wind and low water levels, the group decided to shorten the 160 km trip by about 35 km. As a result, the trip ended at the Dome Petroleum Access bridge, about 90 km north-east of Red Earth Creek, Alberta. The group returned to Edmonton, September 6, 1986.

Hypothesis:

The following research hypothesis was formulated on the basis of numerous other studies and conceptual frameworks (Spielberger and Sarason, 1975; Zuckerman, 1979a) with its implications on trait anxiety, trait sensation seeking, and self-esteem.

1. The control and experimental group's trait sensation seeking, trait anxiety, and self-esteem will remain unchanged after a six day river canoe trip.

Study Design

A quasi-experimental pre/post test design was used with independent samples. The data was statistically analysed with a two-tailed Student t-Test to determine whether or not to accept the null hypothesis. The reason for using a non-directional t-test was based on the findings of the literature review. Accordingly, no changes were expected. The statistical hypothesis tested was:

A) H_0: $\bar{X}_1 = \bar{X}_2$ or B) $H_1 : \bar{X}_1 \neq \bar{X}_2$

The differences between means were assessed between correlated samples (pre and post test) and independent samples (experimental and control group). Because of the study's exploratory nature and group

sample size, a less rigorous significance level ($p < 0.1$) was used as recommended by Franks and Huck (1986).

Sample

Eighteen undergraduate students from the University of Alberta voluntarily took part in the study. The subjects' age ranged from 20 to 27 years old with the average age being 23.5. Prior to the study, the subjects were assured of confidentiality with respect to the information they provided and of their freedom to drop out of the experiment at any time.

The experimental group consisted of 5 male and 4 female third and forth year Outdoor Education and Recreation students enrolled in a special program entitled "Explorations". This program is based on an experiential expeditions concept which commits a group of students to guide their own Outdoor studies for one year. During that year, they choose University courses (ie. Botany, Geology, Canadian History, Native Studies, and etc.) pertinent to their interests and then apply their knowledge through extended trips ranging from dogsleding through Athabasca Pass to an 18 day sea kayaking trip on the Pacific Coast. Students attain a high level of interpersonal and technical skills prior to their journeys. Many of these skills are enhanced during the experiences, and new skill are developed.

The volunteer control group was comprised of 5 male and 4 female third and forth year students enrolled in physical education. All subjects were matched by sex and age with the experimental group and had a strong interest in Outdoor adventure activities.

Procedure

Participants in both groups were asked to answer the three following questionnaires:

1) the Stimulus-Response Inventory of Anxiousness, (appendix B)

2) the Self-Esteem Scale, (appendix C)

3) the Sensation Seeking Survey, Form V (appendix D).

Departing August 31, the experimental group canoed 125 km on the North Wabasca river and returned September 6, 1986. During the canoe trip, the control group remained in the city. Both, control and experimental group answered the three previously mentioned questionnaires August 30 and September 8th. In addition, the experimental group answered pre and post canoe questionnaires, developed by the experimenter (see appendix E). In total, the questionnaires were answered within 20 and 30 minutes before and after the trip. Subjects in the experimental group were required, by the University guidelines of "Explorations", to keep an updated logbook on all their trips. The investigator assisted the students in maintaining an adequate account in their logbooks. A handout describing extra logbook requirements by the researcher was also provided (see appendix F).

Instrumentation

The following instruments were utilized for the study:

(I) The Stimulus-Response Inventory of Anxiousness, developed by Endler (1962), measures trait anxiety. The instrument consists of three separate assessments of anxiety: "interpersonal anxiety scores (summing across specific interpersonal situations), physical danger anxiety scores (summing across specific physical danger situations),

and ambiguous anxiety scores (summing across specific ambiguous situations)" (Endler, 1975, p. 152). It utilizes a sample of 11 situations such as "You are starting out in a sail boat onto a rough sea"; "You are alone in the woods at night"; and provides a sample of 14 responses to each situation. The responses include "Heart beats faster; Enjoy the feeling; Mouth gets dry; . . ." For each response, a scale from 1 to 5 is included (ie. Not at all 1 2 3 4 5 Much faster). .

Endler et al. (1961) stated that the reliability of the S-R Inventory was of the order of 0.95 as measured by the coefficient alpha. This instrument was employed because of the aforementioned situations' relevance to an outdoor setting in the present study.

(II) The Sensation Seeking Survey, Form V created by Zuckerman, consists of 40 questions in which 4 subscales (Thrill and Adventure Seeking, Experience Seeking, Disinhibition, and Boredom Susceptibility) each contains 10 items. In all items, subjects are required to select either A or B.

Zuckerman (1979) reported a coefficient of reliability ranging from 0.83 to 0.86. The SSS, Form V showed a 3 week retest reliability of 0.94. The author employed this test because it seems to be the most widely used instrument in current literature for assessing thrill seeking.

(III) The Self-Esteem Scale was employed to measure self-esteem. It involves answering 10 items on a 4-point scale from "strongly disagree" to "strongly agree". Rosenberg (1965) reported that the Self-Esteem Scale has a two week re-test reliability of 0.88. In effect, this scale uncovers mainly favorable or unfavourable

self-attitudes.

(IV) Pre and Post Canoe trip Questionnaires were developed by the investigator in consultation with 10 experts in the field of outdoor recreation. The questionnaires consisted of a quantifiable and a qualitative section which included quick-answer questions like "What do you believe is your competence level in white water canoe tripping?" (with subjects circling the level appropriate for them; beginner (1) . . . expert (5)), and short-answer questions like "Why do you think that some people do enjoy participating in activities such as white water canoeing, white water kayaking, or rock climbing?

Delimitations

The scope of the study was delimited as follows:

1. The experimental group consisted of nine third and fourth year students (5 males and 4 females) enrolled in the Outdoor Education and Recreation at the University of Alberta.
2. The control group consisted of 5 male and 4 female Physical Education students enrolled at the University of Alberta.
3. All subjects who took part in this study had some white water canoeing experience prior to the study.

4a. The Wabasca river canoe expedition began August 31 and finished September 7, 1986.

4b. Several instruments consisting of Trait sensation seeking, Trait anxiety, Self-esteem, and pre/post questionnaires were applied to collect data.

Limitations

The following were potentially limiting factors of this study:

1. Random selection of subjects was not attempted because the

experiment dealt with a specialized group of Outdoor Education and Recreation students.

2. The results of the self-report questionnaires were dependent on the subjects' honesty.
3. Strong head winds compelled the Explorations group to shorten the river canoe trip by about 25 km.
4. Since the experiment was conducted in vivo, some uncontrollable variables existed. Accordingly, efforts were made to minimize as many of them as possible without seriously intruding on the natural processes of a typical outdoor adventure trip.

CHAPTER IV

RESULTS AND DISCUSSION OF STUDY I

The following chapter provide the quantitative results and discussion of study I.

Hypothesis:

The control and experimental group's trait sensation seeking, trait anxiety, and self-esteem after a six day river canoe trip will remain unchanged.

Result:

This hypothesis was partially supported as indicated in Table 1. To explain this, the hypothesis was divided into two parts:
i) differences in traits between the control and experimental group; and ii) differences between pre and post tests. Both sections dealt with trait sensation seeking, self-esteem, and trait anxiety. The data was presented by group means, standard deviations, and two-tailed t-Tests in tables 1 and 2.

Table 1 showed the comparison between the experimental and control group's response to three questionnaires. In general, the experimental group attained minimally higher means in all three measurements although the differences were not significant.

Table 2 presented a comparison between pre and post measures with correlated samples. No statistical differences were observed with the means of the Sensation Seeking Survey, Form V, and the Self-Esteem Scale.

Table 1

Comparisons Between the Experimental Group and Control Group in Sensation Seeking, Trait Anxiety, and Self-Esteem.

GROUP	TEST	MEAN	S.D.	t
Sensation Seeking				
Exp.	Pre	24.56	1.64	
Con.	Pre	21.44	5.36	1.50
Exp.	Post	23.44	1.93	
Con.	Post	21.67	3.67	0.79
Self-Esteem				
Exp.	Pre	33.22	2.70	
Con.	Pre	31.44	5.57	0.87
Exp.	Post	33.78	3.43	
Con.	Post	32.33	5.79	0.96
Trait Anxiety				
Exp.	Pre	363.33	57.39	
Con.	Pre	339.00	59.86	0.83
Exp.	Post	345.56	66.93	
Con.	Post	313.11	51.08	1.09

* $p < 0.1$

measures with correlated samples. No statistical differences were observed with the means of the Sensation Seeking Survey, Form V, and the Self-Esteem Scale. However, the two-tailed t-test revealed a significant difference ($p < 0.1$) between the means of both groups in response to the Stimulus-Response Inventory of Anxiousness. The experimental and control groups both decreased in trait anxiety during the ten day span.

Discussion:

The findings associated with the first part of the hypothesis indicate that the experimental and control groups were matched since no significant difference was observed between groups.

Table 2

Comparison Between Pre and Post tests on Sensation Seeking, Self-Esteem, and Trait Anxiety.

GROUP	TEST	MEAN	S.D.	t
Sensation Seeking				
Exp.	Pre	24.56	1.64	
	Pos	23.44	1.93	1.25
Con.	Pre	21.44	5.36	
	Pos	21.67	3.67	0.55
Self-Esteem				
Exp.	Pre	33.22	2.70	
	Pos	33.78	3.43	0.63
Con.	Pre	31.44	5.57	
	Pos	32.33	5.79	0.58
Trait Anxiety				
Exp.	Pre	363.33	57.39	
	Pos	345.56	66.93	2.50*
Con.	Pre	339.00	59.86	
	Pos	313.11	51.08	2.82*

* $p < 0.1$.

Concerning the pre and post test results of the second part of the hypothesis, a six-day river canoe trip did not cause any statistical differences in participants' levels of trait sensation seeking and self-esteem. However, a significant difference in trait anxiety was noted in both groups after the post test.

The findings of a lower trait anxiety after six days was not congruent with most theorists' definition of trait anxiety.

Spielberger and Sarason (1973) stated that Anxiety proneness (A-Trait) is generally a "stable personality characteristic which entails a person's disposition to perceive a wide range of situations as threatening and to respond to these situations with differential elevations in state anxiety" (p. 137). Trait anxiety is not normally expected to change within such a short time span.

The experimenter speculated that the anticipation of a new academic year beginning may have had an impact on the subjects since the pre test was performed four days before University classes began and the post test was written once courses were in progress.

A second point to consider is the fact that both control and experimental groups have decreased in trait anxiety. Therefore, it seems plausible to state that the differences observed in both groups is not representative of an outdoor environmental influence.

In brief, the experimenter suggests that the first hypothesis be considered supported.

CHAPTER V

METHODOLOGY AND PROCEDURES OF STUDY II

Introduction

The primary goal of this research was to examine and contrast high and low sensation seekers with respect to relaxation training. In order to gain a better insight, study II attempted to investigate this query and several other subsidiary problems in two modes: qualitatively and quantitatively.

Qualitatively, this chapter outlined the researcher's and experimental subjects' objectives, and described both the physical setting and meteorological conditions. Subsequent to this, a narration of four subjects' perception of the three-day kayak course was interpreted through by the participant observer. This enabled the investigator to give the reader an overall perspective of the kayak course and the extraneous factors affecting people's perception of kayaking in the fall, (ie. temperature, precipitation, water level, appropriateness of the setting, wind, and etc.) These factors were taken into consideration primarily because such environmental conditions might have meliorated or impeded outdoor pursutists' attitudes for efficient kayak skill learning.

Quantitavely, the study's sub-problems examined the effects of the relaxation technique on sensation seekers by giving an overview of the study design, identifying the sample, instrumentation, procedure, delimitations, limitations and hypotheses of this study.

With two modes of investigation, a more global inquiry of sensationseekers and stress intervention was possible.

By delving into a narration of the three-day course, the reader

will have a better organized perception of the quantitative and seekers and stress intervention was possible.

By delving into a narration of the three-day course, the reader will have a better organized perception of the quantitative and qualitative results' relevance to high and low stress seekers.

A THREE-DAY WHITE WATER KAYAK COURSE

Quite often, investigators limit their data collection of field studies to quantitative methods in search for a cause-and-effect result. Yet, when dealing with an in-vivo situation, quantitative methodology may not provide a satisfactory comprehensive picture of the situation.

> Qualitative research, on the other hand, emphasizes inductive rather than causation. This approach offers a research posture which recognizes that intervention programs . . . are not static and consequently cannot reflect a strict cause-and-effect paradigm. (Bullock, 1983, pp. 36, 42).

In support with the foregoing argument, participant observation was utilized in describing to the reader what actually happened during the kayak course, what it was like in the participant's point of view to take part in the program and what specific activities in the kayak course were like. "These descriptions are written in a narrative form to provide a holistic picture of what has happened in the reported activity" (Patton, 1983, p. 302).

In the writer's experience the following events are very representative of a typical three-day commercial white water kayak course. The only difference was that, apart from two 15 minutes

practice sessions, in five instances, the group answered short questionnaires and did a relaxation technique which, in total, lasted about five minutes. Throughout the kayak course, efforts were made by the investigator to be as unobtrusive as possible.

As well, four of the nine participants were described. These characters were chosen to identify contrasting features between high and low sensation seekers. Finally, the investigator provided a description of what the four subjects experienced during the three-day white water kayak course.

Objectives of The Course

The researcher's objectives for this trip were the following:

(1) to investigate the effects of the calming response on sensation seekers by administering self-report questionnaires at designated times during a three-day kayak course.

(2) to examine subjects' responses and behaviours to the new white water environment.

(3) to record daily anecdotes for each participant.

(4) to record subjects' kayak skill acquisition on a daily basis.

Physical Setting

The Upper Red Deer River is located in south-central Alberta about 150 km from Red Deer. The Upper Red Deer river is known for its many sets of rapids ranging from grade II to grade V on its 115 km stretch. Since the intent of this trip was to carry out white water kayak instruction, the three-day course was performed on a safe section of the river between two well-known sites, the "Double Ledge" and "Coal Camp Ledge", covering a distance of about 2.5 km. This river stretch contained rapids of differing difficulty from class II to class IV.

The Alberta Travel Reach Report (1978) recommends it to advanced Open Canadian canoe paddlers and intermediate white water kayakers.

Prior to this course, the 9 experimental subjects had practised some basic skills in the University of Alberta pool. As a result, the participants had acquired the fundamental kayak skills and were ready for an intermediate course (Refer to appendix K for the three-day course outline).

The white water kayak course was held from September 26 to September 28, 1987. Most of the group arrived on the 25th of September late at night. A main base camp was established at a Provincial site by erecting two tents; a large 6 person dome tent and a large wall-tent with a portable wood stove inside. The wood stove and proper clothing were of utmost importance since the Reach Report stated that the Red Deer's cold water is ". . . a definite danger for most of the summer". With it being the end of September, hypothermia was sure to be a major threat to the kayak students especially since learning to white water kayak involved numerous unintended wet exits and some swimming. A small gravel ramp which led to the main road ensured a potentially quick evacuation from the river if the need arrised. The Provincial camping site also included fire pits, two outdoor toilets, wood piles and some crushed stone and gravel for parking vehicles.

The weather improved from very poor on the 26th and early part of the 27th to fair for the remainder of the course. Daily temperatures varied from 4^0C on the first day to about 12^0C on the final day. The precipitation, not being any better, changed from 4 cm of snow and drizzle on the 26th to partially cloudy on the 28th of September. In essence, the low temperature, cold river and snow-covered ground were

anxiety-provoking factors to be considered.

The following section provided an insight on the description of four group members; two high and two low sensation seekers. This was continued with a chronological interpretation of the students' experiences in a weekend kayak course.

Before describing the characters, the investigator wishes to inform the reader that all names are ficticious although the narration is based on collected data by the researcher. Any direct quotes were taken from the subjects' logbooks or from statements made by them in conversation with other group members. For the sake of convenience, a glossary of specific river terms and their definitions is available in appendix J.

Members of the Kayaking Crew

Francisco Lomez (Chico): Sensation Seeking Level P_{88} (Percentile, 88)

Francisco, or Chico as he was called, was often considered a joker. Whenever an open-ended comment was heard, Chico would complement it either with some obscene remarks or some disgusting flatulent sounds. Although he kidded around a lot, his jovial and sociable personality was always appreciated.

Chico rarely sat down doing nothing, regardless of falling rain and snow. With a medium height, good physical frame, and experience as a lumberjack, he had no problem chopping and splitting wood. And that he did, quite frequently. He also helped in gathering wood, stoking the woodstove, preparing the kayaks, etc. or with any other task that needed doing.

Whenever there was mention of kayaking, his eyes would light up. He was indeed a keener, in fact sometimes a little too much. For

instance, on the first day of the white water course, while most people were getting dressed to kayak, Chico and Tim were already in their kayaks crossing the river. When the instructor spotted the two rambunctious characters from a distance, they were immediately called back and asked to wait for the others. "But people are taking their time. Can't we just paddle on the side, man?" asked Chico. "No. Besides, we must do some warm-ups" replied the instructor. Slowly, they pulled out from their boats and waited on shore. It was obvious that Chico was unhappy waiting for the rest of the crew. Yet, shortly after he was smiling again and having a great time with the warm-ups.

Bruce Wood: Sensation Seeking Level, P_{44}

Bruce was an all-around great guy. The entire group valued his company. He was a jack-of-all-trades: an organizer, administrator, mechanic, a cook and a devoted group member. Bruce was often cheerful and very talkative. He occasionally enjoyed acting silly and quite often convinced several others to do the same.

Although Bruce had a small physical frame, he was a spunky little guy who always carried his load as well as other people's. His modesty was distinct. As one of the group members states "Bruce has been contributing so much to our camp life. His organization keeps us functioning, if that's possible."

Bruce had enjoyed canoeing the Wabasca river yet things seemed a little different at the Upper Red Deer river. He was a little worried about kayaking in ice cold rapids with snow on the river sides. For one thing, because of his very slender body, he had to be extra careful not to become hypothermic. Also, Bruce did not have very much confidence in his kayak skills in referring back to the pool sessions.

Joanne Blanche: Sensation Seeking Level, P_{92}

Gregarious in nature, twenty year old Joanne got along well with the group. Her cheerful smile and laughter were frequently noticeable. Joanne was a free thinker in that she wouldn't take part in something if she really didn't wish to. On occasion, she required her own free space and time.

Despite, her height of just over 5 feet, her well-toned healthy body was a clear indication of active involvement in numerous physically exerting outdoor activities. As with Chico, she too looked forward to going kayaking. Having had some experience in rock climbing, rafting, and white water canoeing, Joanne was asked why she took part in these activities. "Because of the challenge, the risk taking and for the love of being outdoors", she replied.

Karen Richards: Sensation Seeking Level, P_{65}

Karen was generally a very active (some might say "hyperactive"), happy-going type of person who loved to talk and talk and talk. When she wasn't talking, she was either singing, laughing, or sleeping. The group didn't mind her. In fact, her everlasting cheerfulness and craziness was frequently contagious among the others especially when she cooked maccaroni, cheese, and tuna for the group's supper.

Well-groom and clean clothed, Karen was a prime example of a healthy individual regardless of her chewing and smoking Colt cigars.

Karen actively participated in numerous sports. At times, it seemed as though nothing could slow her down. Before arriving at the kayaking site, Karen was asked why she partook in high risk activities. As expected, she answered, "Its' challenging. It demands every part of me to work together; physically and mentally. Its'

exciting and unpredictable. ITS' ME!".

In the pre-canoe questionnaire, Karen was asked to describe her feelings regarding a possible 5 km stretch of 1 meter high standing waves to be canoed on the Wabasca river. She answered, "Challenging, exhilarating, . . . high risk involved . . . a little nervous and excited all at once." In contrast to her former answer, Karen seemed a little fearful of rapids. Although her basic kayak skills were adequate, later her fear of white water became readily noticeable as participants paddled up and down the side of the river for practise.

Thursday night

Most of the Explorations group left for the Upper Red Deer river at 19:30 by trucks and car. Unfortunately, two members could not leave until Saturday, September 27 due to their jobs. Long after having supper along the way, we arrived at the proposed campsite at 1:30 in the morning. Approximately 5 cm of snow had fallen. Upon arrival, a few members began setting up the tents while the others unloaded the trucks and trailer. As Chico was securing the ropes from the wall-tent to the snow-covered Spruce trees, he asked "Can you hear that? We're going to have fun tomorrow!" While Chico was excited, Karen was not. After the chores were done, she walked down to the river and thought:

> Standing on the riverbank, listening to the pounding of the waves; seeing the white water in the dark. MY GOD! What have I got myself into? Am I ready? And where is my confidence? I don't know if I'm ready for this stuff! Tomorrow I'll know . . . I guess.

At this point, she wrote an evaluation of her fear at 70 Subjective Units of Disturbance (SUD), a level quite high by most

people's standards.

The group was finally organized and into their sleeping bags by 2:30. The night was cool, with the scent of fresh snow in the air.

Friday

Morning began at 10:30 when some tired bodies got up to light the small woodstove. The cold, damp temperature of about 4^0C, and white blanket of snow did cause some problems in finding dry wood. Chico and Bruce began rummaging any existing dead wood in the area. Luckily, some large pieces of chainsaw-cut pine were found. Chico, knowing that the inside of logs usually remainded dry, began splitting wood. It was 11:30, by the time Joanne and Karen got up and had breakfast (individualized instant oatmeal envelopes). Most people were not overly enthusiastic about going paddling in the cold drizzling rain with snow-covered shores. For that reason, the group as a whole, was slow getting up.

By 13:00, the instructor (Grant Park), picked up on their subtle hints, decided to lecture about cold water safety, river rescue, and etiquette inside the now well heated wall-tent. The talk was followed with a group walk along the riverbank so that "scouting the river" may be taught.

By 15:00, it was decided that the group would go kayaking. The temperature had risen to about 14^0C. Also, the woodstove was well-stoked, a pile of wood was placed inside the tent to dry, and some warm tea was at hand. People dressed for the upcoming activity. Wet suits and paddling jackets were of prime importance. Once everyone was ready, the members were asked to answer two short questionnaires and to perform the calming response as taught during the pool sessions. Five

minutes later, the group was asked to meet on the sandy shore of the river. Most people arrived within minutes and began doing warm-ups with the instructor. A short while later, with the exercises half completed, Karen walked down, dressed to kayak. She began doing what was left of the warm-ups. Strangely enough this very gregarious person was not very talkative.

Grant, the instructor outlined the water boundaries for practising basic strokes as being, essentially up and down the side of the river, no more than 30 meters away from the put-in and 10 meters from shore. The overall site was appropriately selected, consisting of a few class II rapids slightly upstream and downstream with predominantly a class I section in the middle.

Chico and Joanne eagerly jumped into their kayaks while Bruce disappeared into the bush to answer nature's call. After having struggled with his wet suit, Bruce cautiously entered his kayak and wobbled away along the shore. Karen, on the other hand, waited for everyone to be in their kayaks before she decided to slide into hers. When asked if she was nervous, she replied "Yes . . . I'm pretty nervous". Without a word to anyone else, she reluctantly pushed away from shore and paddled ever-so-slowly down the river following others. Like a rank beginner, her forward stroke had deteriorated to a very jerky and sporadic stroke. While not paying attention to where other people turned to head back, Karen continued down the river toward class II rapids. Although several members urged her to turn back, she ignored the warnings. It seemed as though Karen was afraid of initiating strokes that might result in an unwanted wet exit. Grant, spotting this, quickly motored toward her and asked that she go to

shore. Fortunately, she responded accordingly. It was as if Karen had been in a trance, unaware of her surroundings. Gradually she made her way upstream to rejoin the group.

Karen was annoyed with her reactions to the new environment and fully aware of her behaviour. She explained her feelings in the following way:

> The way I felt for most of the day, I didn't want to get near the water. Inside, I didn't feel relaxed or confident. I didn't want to tip . . . As a result, I was silent mostly.
>
> I was annoyed with myself for being so afraid. What a chicken I was when I started the day! Everybody else appeared so relaxed. What the #@$*^\~ was my problem?

Karen had rated her level of fear as being 95 SUD. Despite the extremely elevated score, she continued with the group for the remainder of the three hour lesson. Her skills and confidence level greatly improved by the end of the day. Karen was now talking and smiling again.

Joanne and Chico, laughing and smiling all afternoon, were excited in trying some new maneuvers such as low brace turns, ferries, eddy-ins, and peel-outs. Both risk seekers enjoyed venturing into bigger and bigger waves to see what would happen. Yelling "this is great!" and "Yaaahooo!", there was no doubt for anyone on the river that Chico and Joanne were relishing every minute of it.

Bruce's reaction to the white water experience was, in many ways, similar to Karen's behaviour. He also greatly moderated the amount of talking that was customary for him. In calm water, Bruce was asked how he liked playing in the rapids. In a worried voice, he answered "it's

great . . . when you succeed". Frequently, he parked his kayak in an eddy and sat there for long periods of time, trying to muster up enough courage to cross the "eddy line" for ferrying or peeling out. Finally, Bruce, feeling somewhat ready, attempted to ferry across the river. As his boat left the calmer waters of an eddy, swaying uncontrollably from side to side, Bruce tipped upstream into the fast moving current. Within minutes he and his kayak were rescued and out of the ice cold water. Regardless of him being dressed properly with a wet suit and a paddling jacket, Bruce was very cold. Jumping on the spot and jogging were useless so he decided to call it a day and retire to the heated wall-tent. After changing into warm clothes and drinking some hot tea, he returned as a spectator for the rest of the 3 hour lesson. In dry clothes, he commented that "the first breath-taking plunge into the cold water was scary but refreshing and exhilarating once he was out and exercising on land". Bruce was informed by several other participants who tipped earlier in the afternoon, that they felt the same way.

Later, in his logbook, Bruce commented on how worried and scared he was, not being able to control his kayak and not being able to warm up after overturning. But he added:

> One good thing about it is that it meant that I could get off the river and on to safe dry land. My perceived risk of danger was much higher than necessary; the ice cold water with its rocks hidden in the bottom.

Bruce accurately described what the researcher had suspected. With a greater awareness of the white water environment, he appeared confident that tomorrow would be a little easier.

The river experience ended at 18:00. People got changed and ate a great maccaroni and tuna casserole. Following supper, people relaxed, told jokes, and occasionally exercised their masseter muscles by partaking in some Inuit games (ie. B. & B.)

In retrospect, all four members had a very invigorating white water adventure. Both high sensation seekers, Chico and Joanne, appeared to enjoy themselves tremendously. Initially, both had concerns regarding the water temperature. Yet, after being in it and having fun, Joanne stated "the cold water was not as bad as I expected." Chico, for the sake of discovering how cold it was and checking the effectiveness of his self-rescue technique, performed an Eskimo roll in calm water. This, he found very exhilarating and marked it a 60 on the Subjective Units of Pleasure scale.

In speaking for Chico undoubtedly as well, Joanne expressed joyfully "This is great! I can't wait till tomorrow!".

Meanwhile, Karen and Bruce, both considered to have the same skill levels as Chico and Joanne in white water kayaking, had different experiences with the same activity. Bruce, in thinking over the events of the day, aired his feelings for the following day: "I am still a bit reluctant of my skills and of what the river has in store for us".

Karen, while trying not to worry about tomorrow, expressed her enjoyment in "having my Colt cigars at the end of the first day and knowing I'd made it out, alive."

Interestingly, while both low tension seekers (Bruce and Karen) disclosed very annoying and fearful feelings related to their behaviour on the river in their logbooks, no mention of the river was made in Chico and Joanne's logs.

Also, there was no mention of relaxation training in any of the four participants' logs. Perhaps, now that the low stress seekers had tasted the effects of anxiety, relaxation training would be more appreciated.

Saturday

Today, a kayak skills review and travelling was in store for the Explorations group. The plan was to practise the skills learnt yesterday on the same stretch of river for two hours. A 2.5 km kayak trip was planned after lunch. Although the itinerary for the day was demanding to fulfill, a late start was in order due to the cool weather. Damp semi-frozen stiff paddling clothes was also a prime concern. Fortunately, the partly sunny sky made paddling a little more inviting.

The entire group was off to a good start, even Bruce and Karen. Just before their departure from shore, they were asked to answer and do the relaxation technique. With no complaints, everyone took part in the exercise. Following this, the group quickly warmed-up, then sat into their kayaks and headed for the moving water to review what had been learnt the day before. The skills seemed fairly well acquired by most students. Karen had greatly improved in both confidence and skills. However, such was not the case for Bruce. Signs of anxiety were still displayed (fewer than yesterday) when attempting forward ferries and peel-outs. For instance, before attempting any maneuver, he waited for long periods of time in the slow-moving current of eddies. When asked by the instructor how he was feeling, Bruce replied "Grant, I've been trying the calming response before going into rapids . . . and it works!" Even after informing Grant of his success with

the stress intervention, little behavioural changes were noticed. He still spent a large part of his time sitting and pondering in the safety of big eddies. Bruce thereupon advanced at his own pace which was somewhat slower than most of the group who were now performing their skills in bigger waves, peel-outs into faster currents, etc.

Chico and Joanne were becoming more and more confident, trying harder moves such as peeling out from a hole. After voluntarily entering into a small hole sideways, Joanne asked: "Grant, how do I get out of here now?". Shortly afterward, with a very pronounced smile, she encouraged Chico and others to do the same: "C'mon, go for it boy! Its just great once you know how to lean your kayak."

Chico, a little more reticent than Joanne, gradually poked the bow of his boat in the hole and felt the holding power of the hydraulic recirculation upstream. This was as far as he went. Needless to say, he was more than content with this achievement.

After a few hours of paddling, the group stopped for a short lunch break. Approximately 45 minutes later, the group reconvened at the sandbar, on the riverbank. Some practical and theoretical knowledge was presented concerning leading a kayak trip down a river.

The objective of this short trip was to provide a variety of river characteristics such as smaller eddies, bigger standing waves, and ledges ranging from 0.5 to 1.25 meters in height.

After the brief lecture, the group ventured down into the unknown. The rapids varied between class I and class II for most of the way. Chico and Joanne constantly aimed for bigger waves and unpredictable hydraulics for the thrill of it. Meanwhile, Karen and Bruce paddled straight down the easier channels and also had a grand old time.

Two hours of river travelling had gone by when the instructor forewarned all members that the notorious Coal Camp ledge (a big ledge approximately 1.25 meters high) was only a short way down the river and to follow exactly the same path as he. Several frightened looks reflected back at him. Without exception, all participants obeyed the instructor with accuracy. After landing their kayaks on shore, the group ventured eagerly toward the class IV ledge.

On arrival, Grant, who was perched on a rock only a few feet from the gaping hydraulic, invited the group to get as close as possible to him so that he wouldn't have to shout. Some felt a little insecure with Grant's suggestion but approached just the same. The rumbling sound of the frothy white water regurgitating toward the sedimentary ledge was impressive for some and quite intimidating for others. Following a brief explanation of how and where to safely paddle down Coal Camp ledge, all members were asked to answer the questionnaires on anxiety and sensation seeking states, take their pulse and perform the calming response. The instructor then informed the group of their choice to either paddle down the ledge or portage the kayak to the road nearby. With some second thoughts, everyone decided to attempt it.

Grant descended first and strategically positioned himself, in case of possible overturns. The instructor then flagged the students', one at a time to make their attempt. Then he signaled one student to attempt the challenge. Chico was among the first daredevils. In his log, he regarded the wait before the ledge as being the most fearful event of the entire weekend. Such was the case for most other members as well. Having succeeded, Chico was elated (85 S.U.P.). Grant signaled Joanne to come down. With great confidence, she ploughed

through the foaming hole with ease. Karen was next. Cautiously, she approached the awesome depression and without hesitation she plunged through victoriously. One would suspect that Karen had to deal with strong feelings of anxiety as she paddled down. But to everyone's surprise, she shouted "this is so much fun. I want to do it again". And that she did with success once again. Without a doubt, this was her climax of the weekend. She commented on the exhilaration of going down Coal Camp ledge twice:

> What a boost to my overall confidence. I think I'm starting to enjoy this kayaking stuff. I remembered to relax, take deep breaths, and listen to what Grant had said and it all worked out great. I am excited about tomorrow.

Karen's skills and confidence had improved enormously. Only yesterday, she feared the thought of being on moving water and now it was as though she had kayaked all her life. Some theorists would suggest that Karen mentally contrived the situation so that:

> the conquest of fear through a combination of voluntary act and abandon contributed to a feeling of psychic expansiveness or power." In other words, the greater the degree of fear which the individual succeeds in generation within himself, the greater the enthusiasm she may experience" (Allen, 1980, p. 74).

Bruce was next. As of yet, he had not tipped all day. Pushing off shore, his paddle began to draw him closer and closer to the monstrous hydraulic. His strokes were tentative, shallow, and nonflowing. Bruce's eyes got bigger as he got closer and just as he dropped into the roaring "keeper", Bruce stopped paddling. The hole engulfed him and quickly spat him out upright yet, the unstable water caused him to

loose his balance and capsize. As he floated down the river outside of the boat, he said with a smile, "I almost made it!". For Bruce, this was his highlight of the day. To his dismay, cold water once again, was a deterrent to his enjoyment of the adventure.

With Bruce being the last kayak out of the water, the group returned to their camp by van. A great spaghetti dinner was prepared by Bruce. Several people congratulated him for the excellent meal. After supper, people either talked around a small campfire in the drizzling rain or went to sleep. A long day of physically demanding exercises had gone by.

Sunday

This morning the snow had melted, leaving only the occasional snow patch in dispersed areas . Fewer clouds cluttered the sky and the sun finally made its first lasting appearance. The daily temperature was a warm 10 - 12^{0}C, much warmer then the past few days.

The good weather was an excellent way of finishing a three-day white water kayak course. Generally, most of the group was cheerful in appreciation of the sun's occasional rays of heat.

After breakfast at 10:30, lunches, paddling clothes and kayaks were loaded up for a 5km trip further up the Forestry Trunk road.

Upon arrival, the group carried the kayaks and gear down a poorly maintained dirt trail linking the main road to the water. Several participants commented on the steepness of the surrounding river banks as well as the larger class II and III rapids. Before getting into their kayaks, the subjects scouted the river all the way up to the "Double Ledge", a class V rapid which was comparable to the size of two Coal Camp ledges, one directly below the other. The group was

immediately reassured the gang that they would kayak from below Double Ledge to base campsite. Several sighs of relief were heard. A preferred route was advised by the instructor which led from below Double Ledge down through class III water and finally ending at the junction of the dirt road and the river. After carefully scouting the proposed route, the group was asked to answer questionnaires and perform the calming response. Shortly afterward, the thrill seekers ventured with their kayaks, one by one, down this stretch of water. Everyone succeeded in paddling it without tipping, although Bruce had a few close calls. Both Bruce and Karen's confidence levels had greatly improved since the start of the course. Karen realizing this, mentioned that her most enjoyable event of the day was "cruising down the river with more confidence and feeling much better today than ever." Bruce voiced that it was the "first time" he felt good about himself with respect to skills and confidence on the river. For Chico and Joanne, this stretch of river was simply another exciting challenge with little perceived physical threat.

Frequently, demonstrations of more difficult maneuvers were provided to those who wished to attempt them. Joanne and to a certain extent, Chico were the main reasons for Grant's interest in exhibiting riskier skills. As Joanne exclaimed, "Grant, I'm hooked on the kayak feeling!"

After an hour of practising varied kayak skills at one site, the group paddled toward Coal Camp ledge. With a particular goal in mind, "eddy hopping" was introduced; a technique allowing kayakers to stop and scout from their boat. It consisted of maneuvering one's craft from an eddy on one side of the river to another eddy on the other

downstream side . Chico and Joanne, once again, were very daring and found no wave, too challenging. Adventurously, they followed the demonstrated zig-zag patterns and darted from one eddy to the next. Joanne tipped once while Chico got wet on three occasions. This was not the case for Bruce. When asked to follow Chico's path (going into 75 cm waves), he answered "Oh . . . I don't know Grant!". His confidence level had was not yet to the point where he was ready to take the next step: it was too threatening.

Upon arrival at the take-out point before Coal Camp ledge, the group left their kayaks on shore to scouted the ledge once again. Again, questionnaires were answered and the calming response was performed.

In the same format as the previous day, one boat went down the rapid while the others waited. Chico was first and succeeded. Joanne, perhaps feeling a little overconfident, capsized. Quickly, she got back into her kayak after emptying it and assisted with rescues.

Bruce was next. In contrast with his first time, his stroke was much more on a par with his customary level of skill proficiency. As a result, he came out victorious noting that he had "A SUPER RIDE over Coal Camp ledge". Bruce considered this achievement to be the most enjoyable of the three-day course.

It was Karen's turn now. She had had a great day without once tipping. Throughout the afternoon, she tried several daring stunts. One of them was riding a small hole. Karen, feeling exhilarated, described her experiences:

> . . . going into the hole for the first time. I did it!!! . . . feeling the water hold me there was unreal. I really discovered

the power of water.

With a determined look, she paddled toward the rapid. Upon entering the frothy regurgitating water, she lost control and tipped. When asked later what had happenned, Karen replied ". . . forgot to relax and prepare myself before shooting over the ledge. Forgot to brace and . . . tipped."

Although this was the last run of the weekend for Karen, she was happy with the overall three-day experience.
Feedback from the other members reflected similar feelings.

Later at camp, certificates were distributed to the entire group for passing their Alberta Level II course.
The score breakdown for the four participants was:

Joanne 88% (highest in the group)

Karen 78%

Chico 77%

Bruce 71% (conditional pass)

At the end of the course, students were asked if they had any comments with respect to the kayak course.

Chico simply stated "It was fantastic, man. I never thought I could ever do what I'm doing now." Throughout the course, Chico certainly displayed high thrill seeking characteristics (ie. seeker of uncertainty, high risk, novelty, and variety). Interestingly, he was a firm believer of the relaxation technique's effectiveness by making use of it, at least 6 to 10 times during the course.

Bruce claimed: "I am starting to really enjoy . . . kayaking. I'm not as scared of ledges and rocks as I thought I would be". Typically, as a low sensation seeker with respect to the other members, he tended

to prefer situations that insured easy predictability, lower intensity, and less variety. By the end of the course, Bruce gained more confidence and attempted more demanding techniques. With regards to the stress intervention, Bruce employed the technique as often as Chico, 6 to 10 times during the course.

Karen, who was earlier classified as a low sensation seeker, displayed obvious signs of anxiety on day one. Gradually, her anxiety level had diminished to a more workable level. The investigator speculates that the relaxation technique was indeed effective for Karen based on the following reasons:

First, the change in behaviour while in a kayak was very distinct from day one to day two to day three. In fact the change was evident after one hour of paddling on the first day.

Secondly, while there is no way to verify it, Karen reported that she utilized the calming response on the average, 6 to 10 times per day, as recommended by the instructor.

Finally, she commented on the effectiveness of the stress intervention when she mentally prepared herself for doing ferries, peel-outs and the Coal Camp ledge. Karen's final comments support the speculation that she could, as a result of the calming response, think clearly:

> Prior to the trip I was scared to death to roll or do a wet exit. However when the time came to do an exit, it just happenned. Thinking about it was more scary than actually doing it. Once I got confident, the larger challenges were really enjoyable.

All and all, Karen seemed very pleased with the white water adventure and the calming response.

Joanne, a high tension seeker thoroughly enjoyed herself. As she expressed it: "I'm definitely hooked . . . Yippee!" Like Chico, she displayed numerous high thrill seeking characteristics. Yet in retrospect, Joanne asserts that "the relaxation technique is neat; I'm actually starting to use it quite often." In fact, she employed it 1 to 5 times each day and found that it did help.

In conclusion, the participant observer suggests that, within the context of this field experience, the calming technique was apparently effective not only for the low sensation seeker but also for the high thrill seekers. In essence, Chico and Bruce used the strategy the same number of times and generally voiced a similar level of relaxation training effectiveness. Similarly, Joanne and Karen, both high and low stress pursuers, employed the technique frequently and reported substantial results. In effect, the level of sensation seeking was not found to be an adequate predictor of the relaxation technique's usefulness. Rather, it appeared as though the more frequently the stress intervention was employed, the more favourable the results were.

Study Design

A pre-post quasi-experimental test design with repeated measures was utilized in this study. A one-tail Student's t-test was used to determine the extent of statistically directional change in means.

A) H_0: $\bar{X}_1 - \bar{X}_2 \leq 0$ or B) H_1: $\bar{X}_1 - \bar{X}_2 > 0$

This directional t-test was used for the following two reasons. First, on the basis of studies reported in the literature it was reasonable to expect a clear effect from the relaxation procedure. Thus, it seems possible to predict the direction of a change by a

priori. Secondly, directional tests are "more powerful than nondirectional tests" (Hopkins and Glass, 1978, p. 252).

Because the study is exploratory in nature, Type II errors can be costly since they may eliminate important factors that need to be taken into consideration in future replicated studies (Franks and Huck, 1986). Therefore, 0.1 was considered the acceptable level of significance. Furthermore, all p values were reported so that the reader could quickly identify the mean differences and their degree of significance level.

ii) Qualitative data:

The qualitative data was collected by the researcher in a three-fold manner. First, the researcher took on the role of participant observer. During the three day whitewater kayak course, the writer kept a daily log noting subjects' comments, behaviors and attitudes while on the river, their concerns and their intensity of participation. Secondly, the participants maintained an up-to-date logbook according to the researcher's specifications. Finally, the Spearman Rank Correlation was used to identify whether or not "persons maintained the same relative positions or ranks on two measures" (Hopkins and Glass, 1978, p. 117). A probability of 0.05 was accepted as the significance level for Spearman's Rho primarily because the statistical tables needed to interpret correlation coefficients were not found to have a level of probability any weaker than 0.5 (Hopkins and Glass, 1978; Ferguson, 1981).

When assessing the qualitative data, several researchers suggest that it is up to the investigator to unravel significant behavioral patterns and to organize them in a logical manner that will highlight

the subject's changes in behavior and in emotion (Coutts, 1980).

Sample

Nine subjects took part in a white water kayak course on the Upper Red Deer river in Alberta from September 26 to September 28, 1986. The participants were comprised of the "experimental group" from the former Wabasca river trip used in study I. The objective of this section was to have the participants apply a recently learnt stress intervention technique during the white water kayak course, particularly immediately prior to the experience of perceived stressors.

Instrumentation

The second part of the study involved three questionnaires and one physiological measurement.

(I) The Sensation Seeking Anxiety State Test (SSAST) by Neary and Zuckerman (see appendix H). The SSAST instrument was employed because it allowed the experimenter to investigate two dependent variables at once: state sensation seeking and state anxiety. Also, the SSAST is a short test consisting of 36 statements (ie. I feel adventurous; I feel fearful; and etc.) where the individual is asked to rate the degree of that particular emotion felt from 1 to 5 at that specific time. On average, the test took between 45 and 60 seconds to answer.

The reliability of the Sensation Seeking Anxiety State Test is as expected, very low since state scales vary from moment to moment.

(II) The second instruments consisted of questionnaires developed by the researcher in consultation with 10 experts in the field of Outdoor Education. The Pre and Post Kayak trip Questionnaires corresponded with a quantifiable and a qualifiable section such as "How many years of white water kayak experience do you have?" ranging from

"none (1)" to "11 or more years (5)" and "Identify the part of the kayak course that you think or hope will be the most: enjoyable; annoying; exhilarating; fearful; and boring (see appendix I).

(III) The other dependent variable utilized was heart rate. The subjects were shown how to measure heart rate on the carotid and radial pulse. The measured counts lasted 20 seconds: Cardiac rate was used as a baseline for several reasons.

First, it is among the more frequently employed physiological dependent variables when dealing with psychophysiological research such as anx[redacted] arousal, and relaxation training (Schierman and Rowland, 1985; Barton, 1981; Donat, 1983).

Secondly, an individual can quickly assess his/her own heart rate with a reasonable amount of accuracy if properly taught.

Thirdly, a subject can check his/her own heart rate in a variety of environmental surroundings. This eliminates the need for researchers to follow participants and to use invasive devices.

Finally, since heart rate is easily measured by oneself, it becomes a quick process of receiving physiological feedback on whether or not a relaxation technique is effective for the individual since proper relaxation training has been found to reduce heart rate (Schwartz, Davidson and Goleman, 1978; Benson, Kotch and Crassweller, 1977).

(IV) Logbook, the University of Alberta logbook was used by the subjects. In addition to the other entries required in keeping the log, the subjects were asked to answer the following several short-answer questions:

1) What was the most enjoyable event of the day for you, if any?

(-)S.U.D.___ (+)S.U.P.___

2) What was the most boring event of the day for you, if any?

(-)S.U.D.___ (+)S.U.P.___

3) What was the most exciting event of the day for you, if any?

(-)S.U.D.___ (+)S.U.P.___

4) What was the most terrifying event of the day for you, if any?

(-)S.U.D.___ (+)S.U.P.___

5) What was the most annoying event of the day for you, if any?

(-)S.U.D.___ (+)S.U.P.___

Subjective Units of Disturbance (S.U.D.) (Wolpe, 1970) and Subjective Units of Pleasure (S.U.P.) were used by the individual to rate their intensity in feelings of disturbance and/or of pleasure of daily activities recorded in the log. This was based on a scale from 1 to 100.

Procedure

All subjects practiced their kayaking skills once or twice a week in a pool with a certified white water kayak instructor. This training prepared them for an Alberta Level II kayak certification course on the Upper Red Deer river. Two weeks prior to the kayak course, members of the experimental group were taught the relaxation technique and given a one page handout, as suggested by Everly (1979 b) See Appendix A. Each subject was asked to practise the calming response approximately 10 to 15 times throughout the day.

At the last pool session before the river course, the participants were asked to sit and relax for ten minutes with eyes closed. After the rest, the following routine was established: They were asked to take their pulse, answer the SENSATION SEEKING ANXIETY STATE TEST (SSAST), perform the calming response for 60 seconds in a sitting

position, repeat the heart rate check, and rewrite the SSAST within a few minutes before commencing kayak training.

The participants' heart rate baseline was established one week prior to the kayak course. They were shown how to measure their own heart rate on the radial and carotid arteries. To ensure that the participants were properly checking their pulse, the investigator occasionally monitored their heart rates and compared these findings with their results. In general, the subjects were no more than by a few heart beats per minute away from the researcher's count.

Upon arrival at the kayaking site, the subjects were informed of the schedule to be followed in the next few days. Once in the morning and once in the afternoon, the group was asked to do the pre-established routine (check their heart rate, answer the SASST questionnaires, perform the calming response, recheck their pulse, and re-write the SSAST). This was normally executed while the group scouted rapids about 10 minutes before going on the water. The test and relaxation technique were performed in a seated position as recommended by Everly (1979b). Whenever the group was on the river they were encouraged to apply the relaxation technique independently. The participants were asked to keep an updated version of their logbook. During the white water kayak course, the researcher acted as the instructor and as a participant observer, taking notes of people's behaviour and performance.

Throughout the course, the subjects were gradually introduced to more difficult rapids (class 1+, class 2, . . . class 3+). The Alberta White Water safety guidelines were strictly enforced at all times and the participants were reminded that they were free to choose either to

run or portage the rapids.

The researcher wishes to mention that it was the "Explorations" students who decided on the kinds of trips they took part in. The investigator was approached by the group to instruct them on a three day whitewater kayaking course. Their reason for this was to prepare themselves for an extended sea kayaking trip on the Pacific Coast in April of 1987. Consequently, the technical kayak skills and relaxation technique were perceived as undoubtedly beneficial to their personal growth. The investigator's main concern during the process of their training was to avoid being obtrusive. In effect, the subjects were treated as though they were "paying clients" about to learn a new repertoire of skills.

Delimitations

The scope of the study was delimited as follows:

1. The experimental group consisted of nine 3rd and 4th year students (5 males and 4 females) enrolled in the "Explorations" program within the Faculty of Physical Education and Recreation at the University of Alberta.
2. The study was held from September 26 to September 28 on the Upper Red Deer river in central Alberta.
3. A three-day white water kayak course was offered to the experimental group as requested by them.
4. All subjects were assessed by way of state sensation seeking, state anxiety, state cardiac rate, and logbook.

Limitations

The following were potentially limiting factors of this study:

1. Random selection of subjects was not attempted because the

experiment dealt with a specialized group (Explorations) of Outdoor Education and Recreation students.

2. The qualitative results of the study were dependent on the subjects' honesty.
3. Environmental and meteorological conditions (ie. cold river, snow, and rain) affected the pre-set schedule for the kayaking course.
4. Since the experiment was "in vivo" within an outdoor environment, several uncontrollable variables existed.

Hypotheses

The following research hypotheses were formulated on the basis of the previous theoretical framework (the activation model) with its implications on sensation seeking, anxiety, and relaxation training.

1a. Participants with a high trait anxiety will tend to have a higher state of anxiety than the lower trait anxiety subjects as measured by Endler's Stimulus-Response Inventory of Anxiousness and by Neary-Zuckerman's Sensation Seeking Anxiety State Test (SSAST).

1b. Trait sensation seeking will have an inverse relationship with state anxiety as measured by Zuckerman's Sensation Seeking Survey and by the SSAST test.

1c. Heart rate will correlate positively with state anxiety as measured by radial pulse and by the SSAST test.

1d. State sensation seeking will be inversely correlated with state anxiety as measured by the SSAST test.

2. A situation that is perceived as fearful to a low sensation seeker

will tend to be exhilarating to a high sensation seeker as measured by the pre-canoe trip questionnaire.

3a. Relaxation training will have an increasing effect on participants' levels of state sensation seeking as measured by the SSAST test.

3b. Relaxation training will have a decreasing effect on participants' levels of state anxiety and state heart rate as measured by the SSAST test and radial pulse.

4a. Low sensation seekers will tend to exhibit a greater discrepancy between pre and post state tests than high sensation seekers on Sensation Seeking and Anxiety.

4b. Low sensation seekers will value the relaxation technique more than the high sensation seekers.

The purpose of this study was to investigate the effects of a relaxation technique on thrill seekers during a three day white water kayak course. Four major hypotheses were devised and the results were collected by parametric as well as by non-parametric instruments. The results and discussion are presented separately in relation to each hypothesis in the following chapter.

CHAPTER VI

RESULTS AND DISCUSSION OF STUDY II

This chapter presents the results and discussion of study II. Each hypothesis was addressed individually to ensure clarity and continuity.

Hypothesis 1a:

Participants with a high trait of anxiety will tend to have a higher state of anxiety than the lower trait anxiety subjects as measured by Endler's Stimulus-Response Inventory of Anxiousness and by Neary-Zuckerman's Sensation Seeking Anxiety State Test (SSAST).

Results:

This hypothesis was not supported. The Spearman's Rank Correlation Coefficient was utilized in ranking the subjects from low to high on the Anxiety trait and state tests. As observed, the relationship between trait and state anxiety (Table 3) was positive at 0.3 yet the correlation was not significant at the 0.05 level.

Discussion:

It was hypothesized that a high trait anxious individual would relate more positively with a high state of anxiety than a lower trait anxious person. The results showed a weak insignificant relationship. Although some studies have found that high A-Trait individuals tend to relate more to situations with a higher level of A-State than those with a low A-Trait (Spielberger and Sarason, 1975, Klavora, 1974; Donat, 1983), others have observed only a partial relationship.

By identifying two types of anxiety, "social threat" and "physical threat", Endler (1975) found that only the physically threatening conditions pertained to the high A-State and high trait anxiety

relationship. In effect, this may explain why only a small positive relationship was observed in this study.

Table 3

Calculation of Spearman's Rank Correlation with Dependent State (Sensation Seeking, Anxiety and Heart Rate) and Trait Variables.

	Trait		State		
	S. S.	A.	S. S.	A.	H. R.
Trait S. S.	1.0				
Trait A.	0.27	1.0			
State S. S.	-0.03	-0.65*	1.0		
State A.	0.16	0.3	-0.8**	1.0	
State H.R.	0.1	-0.15	-0.37	0.63*	1.0

* $p < 0.05$; ** $p < 0.01$

By assuming that the Stimulus-Response Inventory of Anxiousness included both kinds of threats, only the physical threat aspect of the test would have related with state anxiety. Hence, only a minimal correlation would result. Zuckerman (1977) elucidates that trait anxiety can not accurately predict a person's level of state anxiety at any given day because researchers are ignoring ". . . the situational factors that influence the states of persons on any given day of their lives" (p. 514).

It should be noted that some studies have not found high state anxiety to be more adequately predicted by higher trait anxiety than by lower trait anxiety (Payne, 1983; Teichman, Rafael and Lerman, 1986).

Hypothesis 1b:

Trait sensation seeking will have an inverse relationship with state anxiety as measured by Zuckerman's Sensation Seeking Survey and by the SSAST test.

Results:

This hypothesis was not supported. The Spearman's Rank Correlation Coefficient was utilized in ranking the subjects from low to high on the Sensation Seeking trait and state anxiety. As observed, the relationship between trait sensation seeking and state anxiety (Table 3) was positive at 0.16 and not significant at the 0.05 level.

Discussion:

Contrary to what was expected, a negative correlation was not noticed between trait sensation seeking and state anxiety. These results did not support Zuckerman's (1978) findings in which he noted that when high and low sensation seekers appraise a risk in the same way, high thrill seekers tend to perceive the task with more pleasure than anxiety, while low sensation seekers tend to experience primarily anxiety.

The insignificant correlation between trait sensation seeking and state anxiety may have resulted in part from the small sample size of 9 students. Zuckerman (1979a) used a sample size of 203 college students from undergraduate psychology classes while Blankstein (1975) tested 83 students.

Furthermore, the individual's subjective rating of their feelings while sitting outside, next to the river, may not have been precise vis-a-vis the white water kayak course due to unfavourable weather conditions (snow, drizzle and cold temperatures).

Hypothesis 1c:

State anxiety will have a positive relationship with state heart rate as measured by radial pulse and by the SSAST test.

Results:

This hypothesis was supported. The subjects were classified from low to high on state heart rate and state anxiety. The Spearman's Rank Correlation Coefficient was utilized. As observed, the relationship between state heart rate and state anxiety (Table 3) was negative at 0.63 and significant at the 0.05 level.

Discussion:

As expected, a positive correlation was found between cardiac rate and state anxiety. These results are consistent with several other studies in purporting that heart rate increased proportionally to psychological challenge as well as stress (Payne and Rick, 1986).

Since cardiac rate related to state anxiety in a positive linear manner and since it is among the more frequently employed somatic dependent variables when dealing with psychophysiological research such as anxiety, arousal, and relaxation training (Schierman and Rowland, 1985; Barton, 1981; Donat, 1983), it may be noted that self-monitored heart rate will generally provide the same relationship as highly sophisticated heart rate measuring devices.

Hypothesis 1d:

An inverse relationship will exist between state anxiety and state sensation seeking as measured by the SSAST test.

Results:

The hypothesis was confirmed. The results of the rank correlation demonstrated that high state sensation seeking was associated with a lower state of anxiety. As can be noted in Table 3, the relationship between state sensation seeking and state anxiety was negative at -0.80 and significant at the 0.01 level.

Discussion:

As expected, a strong negative correlation was found. In effect, individuals who sought positive experiences in learning to white water kayak tended to report low levels of anxiety reactivity. To explain this, Zuckerman (1979a) states that "the tendency to enter into or withdraw from a situation is determined by the balance between state sensation seeking and state anxiety" (p. 196). Studies have found this to be true for a variety of perceived risks. For example, several different types of risk (ie. a psychology experiment, hypnosis, and taking drugs) resulted in a different balance or intensity of reactions to sensation seeking and anxiety states. For instance, the vicarious risk of taking part in a psychological experiment induced lower levels of state anxiety than the consumption of drugs while, on the other hand, the risk associated with being in a psychology experiment resulted in a higher level of state sensation seeking than the risk of taking drugs (Zuckerman, 1979a). In both types of risks, an inverse relationship was observed in sensation seeking and anxiety states. Thus, the results of this study were supportive of Zuckerman's research.

Hypothesis 2:

High and low sensation seekers, when confronted by a similar situation, will perceive it differently as measured by the pre-canoe trip questionnaire.

Results:

This hypothesis was supported. The experimental subjects were asked to describe their thoughts or feelings concerning a potentially stressful situation that they might have to confront on the Wabasca

river canoe trip. This situation was presented to the participants in the pre river canoe trip questionnaire. The question was read as follows:

> In the Canoe Alberta Reach Report (1978), they cite R. G. McConnell's report in which he writes: "Great care had to be exercised in descending the unknown Wabascaw River with its numerous rapids". Canoe Alberta also mentions that at high water, there is a 5 km stretch of rapids consisting of one meter standing waves. What are your thoughts and feelings about this stretch of rapids?

A variety of answers were written, ranging from a few words to several lines. Some participants noted that caution and scouting of the river would be of utmost importance. Also, the task of portaging would be very likely. In quoting individuals, some remarked "I think great care will have to be taken when canoeing any type of rapids." Some participants, feeling a little unsure about the river difficulty, suggested that "the river will need to be researched before attempting it and if there are any doubts about the safety of a stretch of rapids, it will be portaged". It seemed that for some participants, the first thing that came to mind was the potential threat of physical danger because of too much novelty and uncertainty.

Yet, the remaining members of the group made known that this is where the excitement and fun was to begin: "I think it will be very exciting and I am looking forward to canoeing it". Others expressed their feelings with "All right!" and "Yahoo!". No concerns of potential safety hazards were brought forth.

In essence, it appeared as though the experimental group consisted

of two distinct types of individuals; those seeming slightly to moderately worried of possible dangers and those appearing to be elated about the high risks.

Discussion:

Zuckerman (1979b) makes note of individual differences in risk appraisal. He infers that while some people are very conservative in their approach toward novelty and risk, others seek unpredictable excitement, adventure, and risk. Both kinds of individuals are classified as low and high sensation seekers respectively.

On the whole, it is found that high thrill seekers tend to rate dangerous activities lower than those who normally search for less stimulation. As well, Zuckerman (1978) asserts that "even when high and low sensation seekers appraise the risk in the same way, the highs contemplate the activity with more pleasure than anxiety, while the low sensation seekers experience nothing but anxiety" (p. 40).

It has also been noted that high sensation seekers are inclined to be impulsive and emotionally (Yahoo!) expressive in social interactions (Farley, 1986; Groves, 1987;).

As a result, the observations relating to this hypothesis corresponded favourably to the general pattern of the high and low sensation seeker described by Zuckerman (1979b).

Hypothesis 3a:

Relaxation training will have an increasing effect on participants' levels of sensation seeking as measured by the SSAST test.

Result:

This hypothesis was not supported at the 0.1 level of significance. However, an exception did exist with trial "B" in state

sensation seeking. The difference was substantial at 0.03. In general, a slight increase was noticed in Student's "one-tailed" t-test from pre to post. A much greater difference was observed from the first test to the last test.

Table 4 shows the mean, standard deviation, t-test, and the probabilities between pre and post tests.

Table 4

Means, Standard Deviations, and Associated Probabilities for Comparisons Between Pre and Post Measures of State Sensation Seeking.

DAILY TRIALS	MEAN PRE	SD	POST	SD	t-TEST	p
1 pm	45.57	9.6	45.57	7.7	0.36	< .37
2 am	45.11	8.1	47.44	7.9	2.19	< .03
2 pm	49.77	10.2	50.44	9.5	0.39	< .36
3 am	49.11	8.3	50.11	9.2	0.73	< .25
3 pm	50.44	9.5	50.88	9.3	0.44	< .34

Discussion:

The results revealed that the Calming Response did not significantly increase participants' levels of sensation seeking states. The lack of significance level in the difference between means of state sensation seeking after a relaxation technique failed to support Fiske and Maddi's (1961) Activation Level theory as well as Zuckerman's (1979a) "optimal state of arousal" theory. The reason being that individuals try to maintain an optimal range of activation which consists of a comfortable intensity of stimulation with the least amount of discrepancy between their optimal level and their actual level of activation. If this is not possible, then individuals go into an impact modifying behaviour. This prompts the person to either take

part in an impact increasing behaviour (eg. higher risk activities) or in an impact decreasing behaviour (eg. less stressful activities) so as to achieve homeostasis. Consequently, by attempting to reduce the arousal of individuals who seek sensations with a relaxation technique, one would expect a much greater need for sensation seeking; hence an increase in state sensation seeking to make up for the loss of arousal.

The results of Table 4 suggest that the participants either maintained or minimally increased their level of sensation seeking following the 180 second relaxation practice between pre test to post test. Also, pre/post measures increased from day one to day three. Although this stability and minimal increase in sensation seeking may be explained by an increased confidence level due to acclimatization and acquired kayak skills, it should be noted that there was no decrease in thrill seeking.

Hypothesis 3b:

Relaxation training will have a decreasing effect on participants' levels of state anxiety and state heart rate as measured by the SSAST test and radial pulse.

Result:

This hypothesis was supported. The subjects were assessed with the Neary Zuckerman Sensation Seeking Anxiety State Test (SSAST) prior to entering their white water kayaks. Tables 5 and 6 show the mean, standard deviation, t-test, and the probabilities between pre and post tests.

Table 5 demonstrates that, with the exception of trial "B", state anxiety changed significantly after the 60 second relaxation technique. Some of the trials had probabilities as high as 0.01.

The mean, standard deviation, and t-Tests of state heart rate are presented in Table 6. Following the measurement of four resting heart rates taken on separate days, it can be noted that, in general, the group's heart rates were higher than resting heart rate before getting into their kayaks. Following the Calming Response, a significant drop in cardiac rate was noticed.

Table 5

Means, Standard Deviations, and Associated Probabilities for Comparisons Between Pre and Post Measures of State Anxiety.

DAILY TRIALS	MEAN PRE	SD	POST	SD	t-TEST	p
1 pm	30.86	7.9	25.71	4.1	2.07	<0.04
2 am	30.11	6.3	28.55	8.2	1.03	<0.17
2 pm	37.89	11.6	34.00	10.6	2.62	<0.02
3 am	24.00	5.3	21.67	3.5	1.98	<0.04
3 pm	31.44	9.0	26.67	7.1	4.02	<0.005

Table 6

Means, Standard Deviations, and Associated Probabilities for Comparisons Between Pre and Post Measures of State Heart Rate.

DAILY TRIALS	MEAN PRE	SD	POST	SD	t-TEST	p
am*	63.33	8.01				
pm*	66.66	11.56				
am*	78.66	11.77				
pm*	77.45	15.9	74.78	14.9	2.50	< .02
1 pm	68.57	9.9	65.57	8.4	2.19	< .04
2 am	79.00	11.1	72.00	11.3	3.13	< .01
2 pm	84.56	11.7	80.33	12.2	1.78	< .06
3 am	82.78	9.6	76.78	12.5	2.06	< .04
3 pm	85.00	12.0	79.67	12.1	2.40	< .02

* (Resting heart rates several weeks prior to the kayak course).

Discussion:

The study examined the effects of the Calming Response on state anxiety and state heart rate.

State anxiety, as shown in Table 5, decreased significantly. These results support Everly's (1979 b) findings that the Calming Response lowers people's state anxiety level within a matter of seconds. The fact of lowering participants' state anxiety levels may have been instrumental in maintaining people's level of state sensation seeking.

Heart rate, presented in Table 6, indicates a significant reduction of beats per minute after 60 seconds of relaxation training. While some studies do not concur with the present results (Harris et al., 1976), various other researchers have found reduced cardiac rates following relaxation techniques (Harvey, 1978). Grossman, (1983) explains the decreased heart rate in this way: The fight or flight response (anxiety) is normally associated with the sympathetic stimulation of the autonomic nervous system. Some signs and symptoms of this include increases in respiration rate, heart rate, and muscular tension. Relaxation training, however, activates the parasympathetic branch of the autonomic network. Physiological responses include slower breathing rate and a slower cardiac rate. Consequently, when paced abdominal breathing is practised, it specifically stimulates parasympathetic activation. Therefore, paced abdominal breathing counteracts the effects of the sympathetic activation induced by anxiety and tension (Cappo and Holmes, 1984; Harvey, 1978).

A difference in heart rates was also noticed from the first trial to the last trial. This finding indicates that the kayak tasks were perceived to be more positively or negatively stimulating as the course

progressed.

Table 5 elucidates that, with the exception of the practice trial and the "D" trial, state anxiety changed significantly during most trials. Some of the trials had probabilities as high as $p < 0.01$.

Hypothesis 4a:

Low sensation seekers will tend to exhibit a greater discrepancy between pre and post state anxiety and heart rate tests than high sensation seekers.

Results:

The findings showed support for low sensation seekers exhibiting greater discrepancies between pre and post tests for state heart rate but not for state anxiety. In order to verify this hypothesis, the subjects were classified into two groups: high and low trait sensation seekers. Also, score discrepancies due to gender needed to be taken into consideration. For this reason, the researcher implemented Zuckerman's T scores and percentile conversions for total scores of the Sensation Seeking Survey, Form V. The scores were based on means and standard deviations for 377 male and 646 female Introductory Psychology students at the University of Delaware (Zuckerman, 1979a).

Based on percentiles, the selected four high sensation seekers ranged between P_{88} and P_{95} while the 4 low sensation seekers ranged between P_{44} and P_{65}.

Low sensation seekers did not exhibit a greater discrepancy between pre and post state anxiety test than high sensation seekers. Yet, they did show a greater difference in state heart rate.

The difference between pre and post state anxiety and state heart rate was recorded for each subject on 5 trials. Finally, the grand

total of state anxiety and state heart rate discrepancies was collated for both high and low sensation seekers .

As Table 7 points out, it was found that high thrill seekers had a state anxiety score of 102 while the "lows" had 75. With regards to state heart rate discrepancies, low thrill seekers scored 130 and the "highs" added up to 118.

In effect, high sensation seekers reduced their levels of state anxiety by 27% more than low sensation seekers while, on the other hand, low tension seekers decreased their levels of state heart rate by 9% more than the "highs".

Discussion:

The results found that high sensation seekers reduced their level of state anxiety more, subsequent to the relaxation technique than the low sensation seekers. Although contrary to the hypothesis, this observation may be supported by other studies relating high sensation seekers and voluntary participation of relaxation training (Zuckerman, 1979a). Some research has shown that high tension seekers tend to volunteer more often than their counterparts because of the novelty and unpredictability of it all. Furthermore, the high experience seekers tend to quit sooner and practise more infrequently than low sensation seekers (Zuckerman, 1979a). In referring to the previous hypothesis, since the relaxation training involved only a short period of practice time for sensation seekers before and during the kayak course, perhaps the thrill of novelty, change, and unexpectedness had not yet worn away. The writer offers a second speculation. Most studies pertaining to sensation seeking and relaxation training employ resting techniques (i.e. meditation, self-hypnosis, progressive muscular relaxation) that

necessitate a minimum of 15 minutes of practice twice a day. Success with stress reducing techniques of this type depends on the individual's commitment to attend sessions and/or to establish a set training program at home. In the case of the calming response technique, - a quick and easy to learn relaxation intervention, - individuals may be less annoyed with the short time commitment of 30 to 60 seconds and accordingly may be willing to apply it more frequently. This could explain why high sensation seekers had a greater discrepancy after the calming response than the low stress seekers.

Table 7

Degree of Discrepancy Between Pre and Post Test For High and Low Sensation Seeker's State Anxiety (SA) and State Heart Rate (SHR).

		High Sensation Seekers					Low Sensation Seekers				
Codes Trials		L	A	D	I	Total	G	K	B	C	Total
	SA	02	07	22	00	31	04	08	02	00	14
I	SHR	00	03	15	00	18	09	12	00	00	21
	SA	00	01	09	04	14	01	01	02	09	13
II	SHR	21	03	00	12	36	03	09	06	00	18
	SA	05	11	02	03	21	04	08	04	06	22
III	SHR	06	03	03	12	24	00	09	15	08	32
	SA	01	08	02	02	13	07	00	01	01	09
IV	SHR	00	03	06	04	13	00	18	18	02	38
	SA	05	06	09	03	23	05	11	00	01	17
V	SHR	15	09	00	03	27	00	03	12	06	21

Grand Total	SA	SHR
High Sensation Seekers	102	118
Low Sensation Seekers	075	130
Difference	27	-12
Total Discrepancy %	27%	09%

In regard to the second part of the hypothesis, low sensation

seekers did reduce their state heart rates more than the high sensation seekers following the calming response. These observations are consistent with other studies (Schierman and Rowland, 1985). It was found that high sensation seekers responded to a novel stimulus - several tones of 1,000 Hz delivered through headphones - with a decreased cardiac rate while the low sensation seekers reacted with an acceleration in heart rate (Ridgeway and Hare, 1981). Low sensation seekers may have perceived white water kayaking and its unpredictable climatic conditions as being a substantially novel stimulus.

In effect, these findings offered support to the main hypothesis of the thesis, that relaxation training lowered state anxiety and state heart rate. However, results indicated that high thrill seekers decreased more in state anxiety than low thrill seekers while the opposite developed with state heart rate.

Hypothesis 4b:

Low sensation seekers will tend to value the relaxation technique more than the high sensation seekers.

Results and Discussion:

The results displayed several inconsistencies with the above hypothesis. The findings were examined qualitatively with the answers provided in the post kayak course questionnaire. High and low thrill seekers were compared in the way they valued the relaxation technique. Based on the reviewed literature, it was expected that low sensation seekers would benefit more from the technique and thus would value it more than the high risk seekers. Also, it was expected that the high sensation seekers, not feeling the need to reduce their levels of arousal, would tend not to practise the relaxation technique as

frequently as the lower tension seekers. Pertinent data was collected by way of a self-report questionnaire which basically asked for a rating of their opinions followed by extra space for comments. The rating scheme was comprised of a five-point scale including (1) Not at all (2) a bit (3) somewhat (4) yes (5) yes greatly. The high and low seeking groups were the same as those identified in the previous hypothesis. The results and discussion were presented together for each question addressed in order to avoid confusion.

Initially, the group was asked if the three-day white water kayak course had met their expectations. Both, high and low sensation seeking groups responded very favourably with 67% yes greatly and 33% yes. When asked why, some high thrill seekers wrote: "We were able to develop our skills and play as well"; "I wanted to feel confident in a kayak, learn new skills and have fun. Thats what I got!".

Lower thrill seekers tended to highlight slightly different reasons. One subject mentioned that "it required a lot of learning and trust in the instructor and in myself". Another, startled by a mishap with his kayak in a rapid, wrote "I was able to see what a river current does to a kayak".

In terms of sensation seeking characteristics, the high stress seeking group appeared to enjoy the elements of high risk, unpredictability, and novelty whereas the low tension seekers seemed a little reticent about the risk level, their capabilities as well as their confidence levels. Also, there was no mention of fun or play by the low stress seekers. This could perhaps be explained by the outcome of being overly aroused by the white water kayak experience resulting in the actual level of arousal being outside of their accustomed level

of arousal.

The group, by and large, found the calibre of the river for kayaking to be excellent (5). One low stress seeker, however, found the river a little too demanding. This individual ranked P_{44} (44th percentile) on Zuckerman's conversion table for sensation seeking.

When asked to rate whether or not the cold glacial water prevented them from enjoying themselves, the experimental group, in general, noted it to be from (2) "a bit" to (3) "somewhat". There was no major discrepancy between high and low thrill seekers' perception of the water temperature.

All participants believed that they had improved their skills and knowledge in kayaking. Following this, they were asked to what extent they thought the improvement was due to: a) Practice b) Instruction, and c) Improved ability to relax and control anxiety. The results were as follows.

a) Practice
- 56% answered "yes greatly"
- 36% yes
- 11% a bit

b) Instruction
- 89% yes greatly
- 11% yes (high thrill seeker)

c) Improved ability to relax and control anxiety
- 11% yes greatly (low stress seeker)
- 56% yes
- 33% somewhat (low tension seekers)

In regards to question c), most high stress seekers answered yes and generally claimed that "the calming response really worked to clear my head of nervousness so that I could concentrate and do what needed

to be done."

Additionally, most high sensation seekers asserted they applied the calming response at least 1-5 times per day. The low tension seekers, on the other hand, had mixed feelings. While one commented "I really found that the relaxation technique worked well just before going over the ledge", others generally made little use of the calming response (6-10 times during the weekend). One person wrote:

> I want to try an Eskimo Roll in the rapids, but whenever I flip, I can't get my paddle oriented properly and quickly I panic, thinking that I might hit my head on rocks down the rapids.

This individual had only implemented the relaxation technique between 1 and 5 times during the three days of paddling.

In spite of the relaxation technique handout and the multitude of suggestions to apply the calming response, the technique's use was considerably neglected by a fair number of participants. For instance, during the last two pool sessions, subjects were strongly advised to practise the newly acquired calming response. In fact, on the instruction handout, the following information was presented:

> Practise this simple exercise ten to fifteen times each day. The more often you use it, however, the more effective it will be for you. After only a couple of days of practice, this technique will calm you down within five to ten breaths (from 30 to 60 seconds). It works. Try it (Allen, 1983, p. 211).

Every day throughout the white water kayak course the subjects were reminded as well as encouraged to implement their relaxation technique on and off the river whenever perceived threatening situations would arise.

The minimal number of opportunities for performing the calming response during the three-day course was 5, since the participants were evaluated with pre and post state tests at 5 different instances. As stated previously, it was expected that an arousal reducing technique might clash with high sensation seekers' needs for a greater intensity of arousal. Therefore, high sensation seekers would initially partake in relaxation training yet only for a short duration (Zuckerman, 1979a).

However, it was expected that low tension seekers would employ the strategy much more often due to their higher perception of physical threat. The results did not support this contention. The researcher speculates that the threat of physical harm was at a level where the individuals did not trust themselves as well as the effectiveness of the relaxation technique resulting in an inadequate use of the calming response. For instance, the lowest member in the high sensation seeker group used the technique only 6 to 10 times during the course. She remarked, "I'm working on it but I still get excited fast." Feelings of this sort might explain the infrequent application of the calming response by the low tension seekers.

The following question emanated from the previous answers. It asked, "Identify the situations in which you did make use of the relaxation technique." Within the entire group, the most noted situation was kayaking toward the "Coal Camp" ledge, (class IV rapid; Alberta Travel Reach Report, 1978). Other situations included were: just before surfing, doing peel-outs, and back ferries. Statements made by low thrill seekers included: "just before the rapids"; "when I knew I might get tense beforehand"; "when I felt my heart rate go up";

"prior to getting on the white water and before the start of the day". It was observed that low sensation seekers commented more on global situations rather than on specific states. When asked if the calming response was effective, all high thrill seekers stated it "helped". Most low tension seekers, however, felt it only "helped a bit" with the exception of one participant who found it "very helpful".

The more frequent comments made about the relaxation technique's effectiveness were, "It made me feel more calm and mellow and I was able to relax". Most low risk seekers wrote either, "I was able to relax and be calmer at times" or nothing pertaining to the technique's effectiveness.

Initially, it was hypothesized that lower sensation seekers would value the relaxation technique more than the high sensation seeking primarily because of its appeasing effect on arousal. Yet, this was not the case.

In essence, the high tension seekers appeared to value the intervention strategy more than the lower stress seekers. Zern and Stern (1986) caution researchers attempting to measure emotional states while using paper-and-pencil instruments, that questionnaires alone may not reveal the intensity of the situation at hand. Understandably, in hopes of fathoming the previous findings, more research needs to be directed toward a holistic view of subjects' adventure experiences.

CHAPTER VIII

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this research was to contrast and examine high and low sensation seekers with respect to relaxation training during a high risk activity. This was performed in two parts: a six-day river canoe trip and a three-day novice white water kayak course.

In the first study, it was hypothesized that a six-day river canoe trip would not cause any significant changes in anxiety and sensation seeking traits and self-esteem. To verify this, a quasi-experimental pre-post design with independent samples was used. Eighteen University of Alberta students were assessed with the following measurements: Stimulus-Response Inventory of Anxiousness, Sensation Seeking Survey, Form V, Self-Esteem Inventory, and Pre/Post canoe Questionnaires (the latter tests were only for the experimental group). The null hypothesis was partially accepted in that trait sensation seeking and self-esteem did not change significantly yet a significant difference was observed in trait anxiety ($p < 0.1$).

The second study initially presenting a narration describing the subjects' perceptions of the adventure experience. According to their logbooks and the researcher's observations, the calming response was instrumental in reducing some subjects' levels of state anxiety and heart rate.

Following the description of subjects' appraisal of the kayak course, a quasi-experimental pre/post design with correlated samples was employed.

Following the description of subjects' appraisal of the kayak

Following the description of subjects' appraisal of the kayak course, a quasi-experimental pre/post design with correlated samples was employed. Nine University of Alberta students enrolled in the Outdoor Education route were assessed by the following instrumentations: Sensation Seeking State Anxiety Test, heart rate, pre/post Kayak questionnaires, logbook, and participant observation. The results of the several directional hypotheses are presented:

1a. Participants with a high trait anxiety will tend to have a higher state of anxiety than the lower trait anxiety subjects.

1a. This hypothesis was not supported. As observed, the relationship between trait and state anxiety was positive at 0.3 yet the correlation was not significant at the 0.05 level.

1b. Trait sensation seeking will have an inverse relationship with state anxiety.

1b. This hypothesis was not supported. As observed, the relationship between trait sensation seeking and state anxiety was positive at 0.16 and not significant at the 0.05 level.

1c. Heart rate will correlate positively with state anxiety.

1c. This hypothesis was supported. The subjects were classified from low to high on state heart rate and state anxiety. As observed, the relationship between state heart rate and state anxiety was negative at 0.63 and significant at the 0.05 level.

1d. State sensation seeking will be inversely correlated with state anxiety.

1d. The hypothesis was confirmed. The results of the rank correlation demonstrated that high state sensation seeking was

associated to a lower state of anxiety. The relationship between state sensation seeking and state anxiety was negative at -0.80 and significant at the 0.01 level.

2. A situation perceived as fearful to a low sensation seeker will tend to be exhilarating to a high sensation seeker.

2. This hypothesis was supported. In essence, it appeared as though the experimental group consisted of two distinct types of individuals; those who tended to be very cautious, in fact worried of possible dangers and those who were elated about high risks and not worried.

3a. Relaxation training will have an increasing effect on participants' levels of state sensation seeking.

3a. This hypothesis was not supported at the 0.1 level of significance. State sensation seeking was found to have a low probability of having any statistical differences between means with probabilities ranging from 0.25 to 0.37 with the exception of trial "B" where the difference was substantial at 0.03. In general, a slight increase was noticed in Student's "one-tailed" t-test from pre to post.

3b. Relaxation training will have a decreasing effect on participants' levels of state anxiety and state heart rate.

3b. This hypothesis was supported. The subjects were assessed with the Neary Zuckerman Sensation Seeking Anxiety State Test (SSAST) just prior to getting into their white water kayaks. State anxiety changed significantly after the 60 second relaxation technique. Some of the trials had probabilities as high as 0.01. Following the measurement of 4 resting heart

rates taken on separate days, it was noted that in general, the group's heart rates were higher than their resting heart rate before getting into their kayaks. Following the Calming Response, a significant drop in cardiac rate was noticed.

4a. Low sensation seekers will tend to exhibit a greater discrepency between pre and post state tests than high sensation seekers.

4a. The findings showed support for low sensation seekers exhibiting greater discrepancies between pre and post tests for state heart rate but not for state anxiety. High sensation seekers reduced their levels of state anxiety by 27% more than low sensation seekers while low tension seekers decreased their levels of state heart rate by 9% more than the "highs".

4b. Low sensation seekers will value the relaxation technique more than the high sensation seekers.

4b. The results showed several inconsistencies with the above hypothesis. In essence, the high tension seekers appeared to value the intervention strategy more than the lower stress seekers.

Conclusions

It is the investigator's opinion, according to the results, that the calming response was an effective tool for moderating state anxiety and heart rate. Although there were no predictable preferences between level of sensation seeking and usage of the relaxation technique, those participants who employed it frequently on a daily basis, benefited.

However, due to the exploratory nature of this research and its small sample size, these conclusions may not be generalized to any

great extent beyond this.

Though, it was expected that low sensation seekers would better appreciate the usefulness of the calming response, one must recall that people are complex beings. In fact, Baade et al. reminds investigators of this:

> Performance, subjective experience of task difficulty, subjective evaluation of performance, subjectively experienced fear, and the defence mechanisms of each person all interact and determine the final internal state evident in psychophysiological study of activation. (Allen, 1980, p. 73)

Implications

In this study, interesting and potentially important findings were generated. Results suggested that the calming response was instrumental in reducing subjects' levels of state anxiety and state heart rate while maintaining and increasing, to a certain extent, subjects' levels of state sensation seeking. The preceding outcomes may have several implications for relaxation techniques in outdoor adventure programs.

First, agencies and organizations may deal more effectively with clients of equal talent with differing levels of sensation seeking if a quick and easy-to-use relaxation technique is implemented into their program. For instance, 12 people may be sitting in a large raft, going down a roller coaster of class 4 rapids. Some clients may be exhilarated by the splashing water over the raft while others may be a little beyond the point of enjoyment. Due to the nature of the activity, the only alternative for the anxious client may be to sit and perform some relaxation training.

Secondly, the calming response can be practised discretely without others knowing. Therefore the potential elements of intimidation from peers are reduced.

Thirdly, Dunn and Gulbis (1980) make note that

> as the Risk Revolution continues . . . professionals will wish to keep abreast of new ideas which may help them provide reasonably safe but challenging opportunities for bold participants without generating lawsuits for themselves.

Judgmental errors, on the client's part, caused by anxiety and fear, deplete their energy and concentration for the specific requirements of the situation thus possibly resulting in accident. Relaxation training, as presented in this study, significantly reduced people's anxiety levels. Therefore the calming response could prove to be an effective safety feature in an adventure program by providing a more acceptable intensity of arousal for those who want it.

Finally, relaxation training in outdoor adventure activities may be the added touch that will convince participants of the agency's extra concern for the client.

This research has provided some light on the calming response as a means to reduce sensation seekers' level of arousal to a more enjoyable one if so desired. Further studies need to be done to verify the extent to which the calming response helps in reducing unwanted stress in outdoor adventure activities.

Recommendations

The following recommendations for future studies are based on the insight provided by the preceding investigation.

Further research needs to be done on the effectiveness of other

quick and easy-to-use stress interventions in outdoor high risk activities (ie. quieting reflex, stimulus cueing, etc.). As well, different high risk activities should be examined with respect to a relaxation strategy.

A larger sample of outdoor pursuers should be taken into consideration. In other words, several groups of adventure activities should be assessed with respect to the calming response's usage. This would help to ensure that the resulting psychophysiological changes are not a result of the "Hawthorne Effect".

In future studies, it would be interesting to examine a designated group of people's responses to several high risk activities with respect to sensation seeking and anxiety states and heart rate. Perhaps certain trends could be revealed about stress seekers.

The author would recommend that more innovative unobtrusive means of collecting data in field studies be explored. For instance, Provincial parks tend to have "guest books" located near lakes and on campsites where generally, people voluntarily enter their names, address and reason for visiting. Similar guest book stands could be placed next to white water rivers or at the summit of frequently climbed mountains. A technique of this sort would ensure unobtrusiveness.

BIBLIOGRAPHY

BIBLIOGRAPHY

Alderman, R. B., Psychological Behavior in Sport. Philadelphia: W.B. Saunders Company, 1974.

Allen, R. J., Human Stress; Its Nature and Control. Minneapolis: Burgess Publishing Company, 1983.

Allen, S. D. Risk Recreation: A Literature Review and Conceptual Model. In Meier, J. F., Morash, T. W., and Welton, G. E. High Adventure Outdoor Pursuits, Organization and Leadership. Ohio, Publishing Horizons Inc., 1980.

Anderson, N. B., Lawrence, P. S. and Olson T. W. Within-Subject Analysis of Autogenic Training and Cognitive Coping Training in the Treatment of Tension Headache Pain. Journal of Behavioral, Therapeutic and Experimental Psychiatry, 1981, 3, 219-223.

Baker, B. P., Measuring Coach-Athlete Compatibility. Unpublished Masters thesis, University of Alberta, Edmonton, Alberta, 1985.

Barton, J. W., Individual Differences in Physiological Arousal, Anxiety and Performance of Sport Hang Glider Pilots. Unpublished master's thesis, University of Alberta, 1978.

Begley, M., Risky Business. Backpacker, 1986, 5, 36-39.

Benson H., Kotch, J. B. and Crassweller, K. D., The Relaxation Response; A Bridge Between Psychiatry and Medicine. Medical Clinics of North America, 1977, 61, 4, 929-939.

Bullock, C. C. Qualitative Research in Therapeutic Recreation. Therapeutic Recreation Journal, 1983, Fourth Quarter, 36-43.

Carruthers, M., Autogenic Training. Journal of Psychosomatic Research, 1979, 23, 6, 437-440.

Cedoline A. J., Job Burnout in Public Education, New York: Teachers College Press, 1982.

Coutts, I., An Assessment of an Outdoor Leadership Program, Unpublished Master's thesis, University of Alberta, 1980.

Darst P. W. and Armstrong G. P., Outdoor Adventure Activities for School and Recreation Programs, Minneapolis: Burgess Publishing Company, 1980.

Davey C. P., Exertion Arousal, Personality and Mental Performance. Unpublished Doctoral dissertation, University of Alberta, 1973.

Diamond, V., Creativity Mobilization Technique. Journal of Psychosomatic Research, 1979, 23, 6, 441.

Donnelly P. and Birrell S., Motivation and Sport Involvement The Needs For Stimulation and Achievement. Canada: Canadian Association for Health, Physical Education and Recreation, 1978.

Donat, D. C., Predicting State Anxiety: A Comparison of Multidimensional and Unidimensional Trait Approaches. Journal of Research in Personality, 1983, 17, 256-262.

Endler, N. S., Hunt, J. McV., & Rosenstein, A. J., An S-R Inventory of Anxiousness. Psychological Monographs, 1962, 76, (17, Whole No. 536).

Endler, N. S., A Person-Situation Interaction Model For Anxiety, Chapter 6. In Spielberger, C. D. and Sarason I. G., Stress and Anxiety, Volume I. Washington: Hemisphere Publishing, 1975.

Endler, N. S. and Okada M., A Multidimensional Measure of Trait Anxiety: The S-R Inventory of General Trait Anxiousness. Journal of Consulting and Clinical Psychology, 1975, 43, 3, pp. 319-329.

Everly, G.S. Jr., A Psychophysiological Technique For The Rapid Onset Of A Trophotropic State. IRCS Medical Science: Biomedical Technology: Social and Occupational Medicine, 1979, 7, pp 423.

Everly, G. S., A Technique for the Immediate Reduction of Psychophysiological Stress Reactivity: A Pilot Study. Health Education, 1979, 10, 3, 44.

Everly, G. S. and Rosenfeld, R., The Nature and Treatment of the Stress Response. New York: Plenium Press, 1983.

Ewert A., Trends in Outdoor Adventure Education, Paper presented at the Conference of Experiential Education. University of Northern Colorado, Greeley, Colorado, Fall of 1985.

Eysenck, H. J., Arnold, W. J., and Meili, R., The Encyclopedia of Psychology. Bungay, Suffolk: The Chaneer Press, 1972.

Farley, F., The Big T in Personality. Psychology Today, 1986, 20, May, 44-52.

Ferguson, G. A. Statistical Analysis in Psychology and Education. New York, McGraw-Hill: 1981.

Fimian M. J., What is Teacher Stress? The Clearing House, 1982, 56, 3, 101-105.

Fiske, D. W. and Maddi, S. R., Functions of Varied Experience. Illinois: Dorsey Press, 1961.

Franks B. D. and Huck S. W., Why Does Everyone Use the .05 Significance Level? Research Quarterly For Exercise and Sport, 1986, 57, 3, 245-249.

Fredericks L. E., The Value of Teaching Hypnosis in the Practice of Anesthesiology. The International Journal of Clinical and Experimental Hypnosis, 1980, 28, 1, 6-15.

Freeman, L. J., Conway, A. W. and Nixon P. G. F., Heart Rate Response Emotional Disturbance and Hyperventilation. Journal of Psychosomatic Research, 1986, 30,4, 429-436.

Freud, S., Collected papers. Vol. 1. London: Hogarth Press, 1959.

Freud, S., The problem of anxiety. New York: W. W. Norton, 1963.

Furnham, A., Extraversion, Sensation Seeking, Stimulus Screening and Type "A" Behaviour Pattern: The Relationship Between Various Measures of Arousall. Personal Individual Differences, 1984, 5, 2, 133-140.

Gibson, P. M., Therapeutic Aspects of Wilderness Programs: A Comprehensive Literature Review. Therapeutic Recreation Journal, 1979, 2, 21-33.

Gieck J., Stress Management and The Athletic Trainee. Athletic Training, 1984, Summer, 115-119.

Geron, E., Application of Psychological Methods to Competitive Sport. International Journal Of Sport Psychology, 1983, 14, 123-131.

Grossman P., Respiration, Stress, and Cardiovascular Function. Psychophysiology, 1983, 20, 3, 284-300.

Harris, V. A., Katkin, E. S., Lick, J. R. and Habberfield, T., Paced Respiration As A Technique For The Modification Of Autonomic-Response To Stress. Psychophysiology, 1974, 13, 5, 386-390.

Harvey, J. R., Diaphragmatic Breathing: A Practical Technique for Breath Control. The Behavior Therapist, 1978, 1, 13-14.

Heinrich R. L. and Schag C. C., Stress and Activity Management: Group Treatment for Cancer Patients and Spouses. Journal of Consulting and Clinical Psychology, 1985, 53, 4, 439-446.

Herganhahn, B, R., An Introduction to Theories of Personality. New Jersey: Prentice-Hall Inc., 1984.

Hiebert, B. A., A Framework For Planning Stress Control Interventions. Conseiller Canadien/Canadian Counsellor, 1983,17, 2, 51-61.

Holmes, D. S., McCaul, K. D. and Solomon S., Control of Respiration as a Means of Controlling Responses to Threat. Journal of Personality and Social Psychology, 1978, 36, 2, 198-204.

Hopkins D. K. and Glass G. V., Basic Statistics for the Behavioural Sciences. New Jersey: Prentice-Hall Inc., 1978.

Ivancevich, J. M. and Matteson, M. T., Stress at Work; A Managerial Perspective. United States: Library of Congress Cataloguing in Publication Data, 1980.

James, G. D., Yee, L. S., Harshfield, G. A., Blank S. G., and Pikering T. G., The Influence of Happiness, Anger and Anxiety on the Blood Pressure of Borderline Hypertensives. Psychosomatic Medicine. 1986, 48, 7, 502-508.

Klavora, P., State Anxiety and Athletic Competition. Doctoral Dissertation, University of Alberta, 1974.

Lanier, L. L., The Active Years. Environment Views, 1983, 6, 3, May/June, 5-8.

Luthe, W., Autogenic Training; Correlationes Psychosomaticae. New York: Grune and Stratton, 1965.

Martin, M., Individual Differences in Sensation Seeking and Attentional Ability. Personality and Individual Differences, 1985, 6, 5, 637-639.

Mason, J. W., A Historical View Of The Stress Field. Journal of Human Stress, 1975, March, 6-12.

Mortlock, C., Adventure Education. United Kingdom: Ferguson of Keswick, 1978.

Parks Canada Longitudinal Data on The Participation of Canadians in Outdoor Recreation Activities from 1967 to 1977, Socio Economic Research Division (S.E.R.D.) 77-15 Ottawa: Ministry of Indian and Northern Affairs, 1977.

Patton, M. Q. Qualitative Evaluation Methods. California: Sage Pulications Inc., 1983.

Payne R. L. and Rick J. T., Heart Rate as an Indicator of Stress in Surgeons and Anaesthetists. Journal of Psychosomatic Research. 1986, 30, 4, 411-420.

Petry H. M. and Desiderato O., Changes in Heart Rate, Muscle Activity, and Anxiety Level Following Shock Threat. Psychophysiology, 1978, 15, 5, 399-402.

Rama, S. S., Merchant, V., Wangyal, G. and Singh B., Inner Paths. India: The Himalayan International Institute of Yoga Science and Philosophy, 1976.

Rama, S., Ballentine, R. Hymes, A., Science of Breath. Pennsylvania: The Himalayan International Institute of Yoga Science and Philosophy, 1981.

Ridgeway D. and Hare R. D., Sensation Seeking and Psychophysiological Responses to Auditory Stimlation. Psychophysiology, 1981, 18, 6, 613-618.

Rosenberg, M., Society And The Adolescent Self-image. Princeton: Princeton University Press, 1965.

Rouse, S. J., Selected Effects of Progressive Relaxation Training on Female Gymnasts. Unpublished Ph.D Dissertation, University of Alberta, 1984.

Schierman, M. J. and Rowland G. L., Sensation-Seeking and Selection of Entertainment. Personality of Individual Differences, 1985, 6, 5, 599-603.

Schuler R. S., Dealing With The Effects Of Work-Related Stress. FOCUS, 1982, 48, 3, 177-181.

Schulte, H. J. and Abhyanker, V. V., Yogic Breathing and Psychologic States. Arizona Medicine, 1979, 36, 9, 681-683.

Schwartz, G. E., Davidson, R. J. and Goleman, D. J., Patterning of Cognitive and Somatic Processes in the Self-Regulation of Anxiety: Effects of Meditation versus Exercise. Psychosomatic Medicine, 1978, 40, 4, 321-328.

Schwartz, G. E., Stress Mangement in Occupational Settings. Health Promotion At The Worksite, 1980, 95, 2, 99-108.

Seamonds, B. C., Stress Factors and Their Effect on Absenteeism in a Corporate Employee Group. Journal of Occupational Medicine, 1982,24, 5, 393-397.

Selye, H., Stress Sans Détresse. Québec: La Presse, 1974.

Singh, M., Govindarajulu, L. K. and Dhanaraj, H. V., Fitness Through Yoga. Edmonton: University of Alberta Printing Services, 1986.

Skow, J., Risking It All. Time, 1983, August, 50-57.

Snaith, P., Assessment and Treatment of Pervasive Anxiety. Psychotherapeutic Psychosomatics, 1986, 46, 23-34.

Snyder, R. J., A Comparative Investigation of Attention Control Training and Attention Control Training Augmented by E.M.G. Biofeedback. Unpublished Masters thesis, 1982, University of Alberta.

Spielberger, C. D., Anxiety: Current Trends in Theory and Research. New York: Academic Press, 1972.

Spielberger, C. D. and Sarason I. G., Stress and Anxiety, Volume I, Washington: Hemisphere Publishing, 1973.

Stanké, A., La Méditation Transcendantale. Montréal: Editions internationales Alain Stanké Ltée, 1976.

Stroebel, C. F., Quieting Response Training. Biomonitoring Applications, New York, 1978.

Swinnerton, G. S., Recreation on Agricutural Land in Alberta. Edmonton: Environment Council of Alberta, 1982.

Teichman, Y., Rafael, M. B. and Lerman, M., Anxiety Reaction of Hospitalized Children. British Journal of Medical Psychology, 1986, 59, 375-382.

Travel Alberta, Reach Reports of the Red Deer River System, Booklet 2, 1978.

Travel Alberta, Reach Reports of the Red Deer River System, Booklet 5, 1978.

Tuft, M., Finding High Level Wellness Trough Outdoor Pursuits. Explore, 1985, 22, Fall, 9-15.

Watters, R. The White-Water River Book. Vancouver, Douglas & McIntyre: 1982.

Winslow C. D. and Stevens L., Paced Abdominal Breathing and EMG Responsivity. Perceptual and Motor Skills, 1983, 56, 107-117.

Wolpe, J., The Practice of Behaviour Therapy. New York, Pergamon Press: 1970.

Zern, D. S. and Stern, G. W., A Cross-Cultural Survey of the Effect of Anxiety on the Relationship Between Child Rearing and Cognition. Genetic, Social and General Psychology Monographs, 1986, 112, 2, 219-243.

Zuckerman, M., Dimensions of Sensation Seeking. Journal of Counseling and Clinical Psychology, 1971, 36, 1, 45-52.

Zuckerman M., Development of a Situation-Specific Trait-State Test for the Prediction and Measurement of Affective Responses. Journal of Consulting and Clinical Psychology, 1977, 45, 4, 513-523.

Zuckerman, M., The Search For High Sensation. Psychology Today, 1978, 11, 9, 38-40, 43, 46, 96-99.

Zuckerman, M., Sensation Seeking: Beyond the Optimal Level of Arousal. Erlbaum, Hillsdale, New Jersey, 1979a.

Zuckerman, M., Sensation Seeking and Risk Taking. In Izard, C. E., Emotions in Personality and Psychopathology. New York: Plenum Press, 1979b.

APPENDICES

APPENDIX A
THE CALMING RESPONSE

APPENDIX A

THE "CALMING DOWN" TECHNIQUE

Instructions are provided for performing the calming down technique.

Copyright permission was not obtained.

Allen, R. J. Human Stress: Its Nature and Control. Minnesota, Burgess Publishing Company, 1983: pp. 210-211.

APPENDIX B
THE STIMULUS-RESPONSE INVENTORY OF ANXIOUSNESS

APPENDIX B

INVENTORY OF ATTITUDES TOWARD SPECIFIC SITUATIONS

The Stimulus-Response Inventory of Anxiousness questionnaire was utilized to identify subjects' trait anxiety. Copyright permission was not obtained.

Endler, N. S., Hunt, J. McV., & Rosenstein, A. J., An S-R Inventory of Anxiousness. Psychological Monographs, 1962, 76, (17, Whole No. 536).

The Stimulus-Response Inventory of Anxiousness questionnaire was utilized to identify subjects' trait anxiety. Copyright permission was not obtained.

Endler, N. S., Hunt, J. McV., & Rosenstein, A. J., An S-R Inventory of Anxiousness. Psychological Monographs, 1962, 76, (17, Whole No. 536).

The Stimulus-Response Inventory of Anxiousness questionnaire was utilized to identify subjects' trait anxiety. Copyright permission was not obtained.

Endler, N. S., Hunt, J. McV., & Rosenstein, A. J., -An S-R Inventory of Anxiousness. Psychological Monographs, 1962, 76, (17, Whole No. 536).

The Stimulus-Response Inventory of Anxiousness questionnaire was utilized to identify subjects' trait anxiety. Copyright permission was not obtained.

Endler, N. S., Hunt, J. McV., & Rosenstein, A. J., An S-R Inventory of Anxiousness. Psychological Monographs, 1962, 76, (17, Whole No. 536).

APPENDIX C
THE SELF-ESTEEM INVENTORY

APPENDIX C

SELF-REPORT QUESTIONNAIRE

Rosenberg's Self-Esteem Inventory was used to determine subjects' level of self-esteem. Copyright permission was not obtained.

Rosenberg, M. Society and the Adolescent Self-Image. Princeton: Princeton University Press, 1965.

APPENDIX D
SENSATION SEEKING SURVEY, FORM V

APPENDIX D

SELF-REPORT QUESTIONNAIRE

The Sensation Seeking Survey, Form V was used to determine subjects' level of trait sensation seeking. Copyright permission was not obtained.

Zuckerman, M., Sensation Seeking: Beyond the Optimal Level of Arousal. Erlbaum, Hillsdale, New Jersey, 1979a.

INTEREST AND PREFERENCE TEST

The Sensation Seeking Survey, Form V was used to determine subjects' level of trait sensation seeking. Copyright permission was not obtained.

Zuckerman, M., Sensation Seeking: Beyond the Optimal Level of Arousal. Erlbaum, Hillsdale, New Jersey, 1979a.

INTEREST AND PREFERENCE TEST

The Sensation Seeking Survey, Form V was used to determine subjects' level of trait sensation seeking. Copyright permission was not obtained.

Zuckerman, M., Sensation Seeking: Beyond the Optimal Level of Arousal. Erlbaum, Hillsdale, New Jersey, 1979a.

INTEREST AND PREFERENCE TEST

The Sensation Seeking Survey, Form V was used to determine subjects' level of trait sensation seeking. Copyright permission was not obtained.

Zuckerman, M., Sensation Seeking: Beyond the Optimal Level of Arousal. Erlbaum, Hillsdale, New Jersey, 1979a.

APPENDIX E

E-I PRE CANOE TRIP QUESTIONNAIRE

E-II POST CANOE TRIP QUESTIONNAIRE

APPENDIX E-I

PRE-CANOE TRIP QUESTIONNAIRE

Name:_____ Date:_____

PART I

Circle the number underneath the appropriate answer.

1. How many years of white water canoeing experience do you have?

none	1-2	3-5	6-10	11 or more
1	2	3	4	5

2. How would you rate your white water canoeing skills?

poor	fair	average	good	very good
1	2	3	4	5

3. What is the most difficult class of river you feel comfortable canoeing? (According to the International Scale of River Difficulty; Explanation of categories are included at the back of the questionnaire).

Class I	Class II	Class III	Class IV	Class V
1	2	3	4	5

4. What is the most difficult class of river you would feel confident leading others on a canoe trip?

Would not lead	Class I	Class II	Class III	Class IV
1	2	3	4	5

5. How would you rate your skills? (Circle the appropriate level)

	inadequate		marginal		adequate
a) Swimming:	1	2	3	4	5
b) First Aid:	1	2	3	4	5
c) Search and Rescue:	1	2	3	4	5
d) River Canoeing:	1	2	3	4	5
e) Trip Leading:	1	2	3	4	5
f) Other:	1	2	3	4	5

PART II

6. What part of the trip do you think (or hope) will be the most:

enjoyable? _____

_____

exhilarating? _____

_____

annoying? _____

_____

fearful? _____

_____

boring? _____

_____

7. The Canoe Alberta Reach Report stresses that mosquito head nets, heavy thick clothing, leather gloves, mosquito-proof tents and "lots of insect repellent should be included on the equipment list."
How will you deal with the mosquito problem in a practical sense and emotionally?

_____
_____
_____
_____

8. In the Canoe Alberta Reach Report, they cite R.G. McConnell's report in which he writes " Great care had to be exercised in descending the unknown Wabiscaw River with its numerous rapids,"
Canoe Alberta also mentions that at high water, there is a 5 km stretch of rapids consisting of 1 m standing waves.
What are your thoughts and feelings about this stretch of rapids?

_____
_____
_____
_____

9. Why do you enjoy participating in activities such as white water canoeing, white water kayaking, or rock climbing?

_____
_____
_____
_____

10. Why do you think that some people don't enjoy participating in activities such as white water canoeing, white water kayaking, or rock climbing?

_____
_____
_____
_____

A similar questionnaire will be handed out after the six-day canoe trip on the Wabasca river.

THANK YOU

APPENDIX E-II

POST CANOE TRIP QUESTIONNAIRE

Name:_____ Date:_____

1. Did the white water canoe trip meet your expectations?
YES NO

Why?_____
_____
_____

Circle the appropriate number that best describes your feelings.

2. How would you rate your white water canoeing skills?

poor	fair	average	good	very good
1	2	3	4	5

3. What is the most difficult class of river you feel comfortable canoeing? (According to the International Scale of River Difficulty).

Class I	Class II	Class III	Class IV	Class V
1	2	3	4	5

4. What is the most difficult class of river you would feel confident leading others on a canoe trip?

Would not lead	Class I	Class II	Class III	Class IV
1	2	3	4	5

5. What part of the trip do you think was the most (if any)?:

enjoyable? _____
_____

exhilarating? _____
_____

annoying? _____
_____

fearful? _____
_____

boring? _____
_____

6. Any additional comments or suggestions for the next trip or for next years' "Explorations" group?

_____
_____
_____
_____

Record your pulse for 20 seconds. ____ X 3 = _____ beats/minute.

THANK YOU FOR YOUR COOPERATION!

APPENDIX F
LOGBOOK OUTLINE

APPENDIX F

Personal Log

The personal log of the trip will help you become more aware of interactions taking place involving the environment, program elements, the group and you. Near the end of the course you will be asked to hand in your log of the trips you took part in.

On the first page of the log, a list of the participants should be included along with a contact person in case of an emergency.

Each day you will fill out at least two pages for the day. The one on the left should involve the environment, program elements and the group; the one on the right your own responses and feelings of the day. A sample of the suggested structure is presented:

Page 1

Date: August 31/1986 - 22:00

The Wabasca River Canoe Trip

Environment

1. Weather -	a) temperature b) precipitation c) cloud formation, etc.
2. Surroundings -	a) river characteristics, b) vegetation, c) scenery, etc.
3. Travel -	a) time and distance between stops, (ie. breakfast-lunch-supper).

Activities of the day

1. Educational:	Rick taught us how to differentiate an edible plant from a poisonous one.
2. Social:	Joanne was telling riddles all night long. Everyone was really into it.
3. Free time:	Rob and I wrote our logs and then we went fishing several hundred feet from our camping spot.

Menu

1. Meals:	Food Evaluation of breakfast, lunch, and dinner. Today, lunch was terrible; Macaroni with cheese, tuna, peanut butter and marshmallows mixed all together. Micky ate his share as well as mine.
2. Cooking method:	Made a fire pit with a circle of rocks. An Australian crane was constructed above it. It worked well but took a long time to build.

Campsite:

1. Appearance:	Camped on a spur, next to the river; a lot of shrubs and long grass yet not very secluded. Windy!

2. Camp style: The theme of our trip is "No trace camping". We've been doing well so far.

Group Coping

1. Communication: The group doesn't seem to have any problems communicating except that Henry always tries to be the leader and some of us don't like it. I'll have to tell him.
2. Cooperation: Everyone seems to be doing their share. Tonight, the tents were up in no time and the supper was started soon after.
3. General Fitness: The group seems generally fit, yet Joe should work out a little more. He is always the last one to carry his packsack and canoe across a portage.

Page 2 Responses and Feelings

1. Today, what activity if any, did you find the most:

Enjoyable? The water fights (50 SUPS) and the great sweat lodge (50 SUPS).

Boring? There was no variety in our lunches; not much to eat (40 SUDS).

Exhilarating? Kayaking down from a 20 foot grassy hill into the river (70 SUPS).

Annoying? Paddling against 60 km headwinds. My whole body is aching (30 SUDS).

Fearful? Drinking the water; Ever since I had "Beaver Fever" last spring, I'm afraid to get again (SUDS 30).

Rate those feelings according to S.U.D. and S.U.P.

PLEASE KEEP YOUR LOG UP-TO-DATE, EVERYDAY.

N.B.

S.U.D. Subjective Units of Disturbance
(Rated on a continuum from 1 to 100) A low level of disturbance of 1 may be sitting around a camp fire with no smoke in your eyes.
An extremely high level of disturbance of 100 might be waking up to a fire in your tent.

S.U.P. Subjective Units of Pleasure
A Low level of pleasure of 1 may be nothing exciting happening, just paddling along a slow meandering river.
An extremely high level of pleasure of 100 might be; seeing a pizza after being on a 15-day canoe trip.

APPENDIX G
INTERNATIONAL SCALE OF RIVER DIFFICULTY

APPENDIX G

The International Scale of River Difficulty

A description of river difficulties is provided. Copyright permission was not obtained.

The American National Red Cross, Canoeing. Washington: Library of Congress, 1985, pp. 320-321.

APPENDIX H
SENSATION SEEKING ANXIETY STATE TEST

APPENDIX H

SELF-REPORT QUESTIONNAIRE

The Sensation Seeking Anxiety State Test was used to determine subjects' levels of state sensation seeking and state anxiety. Copyright was not obtained.

Zuckerman, M., Sensation Seeking: Beyond the Optimal Level of Arousal. Erlbaum, Hillsdale, New Jersey, 1979a.

APPENDIX I

I-a PRE KAYAK COURSE QUESTIONNAIRE

I-b POST KAYAK COURSE QUESTIONNAIRE

APPENDIX I-A

PRE-KAYAK EXPEDITION QUESTIONNAIRE

Code Name: _____ Date: ___/09/86
Age: ____ Gender: M or F

PART I

Circle the number underneath the appropriate answer.

1. How many years of white water kayak experience do you have?

none	1-2	3-5	6-10	11 or more
1	2	3	4	5

2. How would you rate your white water kayak skills?

poor	fair	average	good	very good
1	2	3	4	5

3. What is the most difficult class of river you feel comfortable kayaking (according to the International Scale of River Difficulty; Explanation of categories are included at the back of the questionnaire)?

Class I	Class II	Class III	Class IV	Class V
1	2	3	4	5

4. What is the most difficult class of river you would feel confident leading other kayakers?

Would not lead	Class I	Class II	Class III	Class IV
1	2	3	4	5

PART II

5. The Travel Alberta Reach Report states that the Upper Red Deer River is only recommended for advanced open Canoeists and intermediate white water kayakers. It goes on to mention that several ledges (1.25 m in height) are found throughout the river.

Are you concerned about your level of competence for a river of this calibre?

not at all	a little	somewhat	yes	yes greatly
1	2	3	4	5

6. The Reach Report also mentions that the Red Deer's cold water is "a definite danger for most of the summer". Does this worry you?

not at all	a little	somewhat	yes	yes greatly
1	2	3	4	5

7. Imagine yourself being the "sweep boat" of a group of kayakers and you loose sight of them around a river bend. Casually, you paddle around the bend and notice that the group is on shore, portaging the class V rapids. Unfortunately, you are too far into the ravine to turn back and there is no way off the river above the rapids. Gradually, you hear the "roaring" of the white water. How would you rate your ability to control your emotions and your thinking in a rational mode?

very poor	poor	fair	good	very good
1	2	3	4	5

8. You have been shown a relaxation technique to be used prior to a stressful activity. Do you believe that it will help you control your thoughts and emotions during a stressful moment?

not at all	a bit	to a certain extent	yes	yes greatly
1	2	3	4	5

10. Identify the part of the kayak course that you think or hope will be the most:

enjoyable? _____
_____

annoying? _____
_____

exhilarating? _____
_____

fearful? _____
_____

boring? _____
_____

A similar questionnaire will be done after the white water kayak trip.

YOUR PARTICIPATION IN THIS STUDY IS GREATLY APPRECIATED.

THANK YOU !

APPENDIX I-b

POST KAYAK COURSE QUESTIONNAIRE

CODE NAME:_____ DATE:___/ 09 /86

Circle the appropriate number that best describes your feelings.

1. a) To what degree did the white water kayak course meet your expectations?

not at all	a bit	somewhat	yes	yes greatly
1	2	3	4	5

Why? _____

_____

_____

2. How would you rate the Upper Red Deer river's level of difficulty for kayaking, this past weekend?

Not Applicable	Excellent	Good	Fair	Poor
1	2	3	4	5

3. What do you believe is your level of competence in white water kayak now?

beginner	novice	intermediate	advanced	expert
1	2	3	4	5

4. How would you rate your white water kayak skills?

poor	fair	average	good	very good
1	2	3	4	5

5. What is the most difficult class of river you feel comfortable white water kayaking? (According to the International Scale of River Difficulty)

Class I	Class II	Class III	Class IV	Class V
__ 1	2	3	4	5

6. What is the most difficult class of river that you would now feel confident leading others on a white water kayaking trip?

Would not lead	Class I	Class II	Class III	Class IV
1	2	3	4	5

7. If you have rated your kayaking competence and/or willingness to take on more challenging water now than before this trip, to what extent do you think this improvement is due to:

a) <u>Practice</u>:

not at all	a bit	somewhat	yes	yes greatly
1	2	3	4	5

Comments:_____

_____

b) <u>Instruction</u>:

not at all	a bit	somewhat	yes	yes greatly
1	2	3	4	5

Comments: _____

_____

c) Improved ability to relax and control anxiety

not at all	a bit	somewhat	yes	yes greatly
1	2	3	4	5

Comments: _____

_____

8. a) Did the Red Deer river's cold water prevent you from enjoying yourself in a kayak?

not at all	a bit	somewhat	yes	yes greatly
1	2	3	4	5

b) Did it worry you, during the course?

not at all	a bit	somewhat	yes	yes greatly
1	2	3	4	5

9. Imagine yourself being the designated "sweep boat" for a group of kayakers and you loose sight of your friends around a river bend. Casually, you paddle around the bend and notice that the group is on shore, portaging the class V rapids. Unfortunately, you are too far into the ravine to turn back and there is no way off the river above the rapids. Gradually, you hear the "roaring" of the white water. How would you rate your ability to control your emotions and your thinking in a rational mode?

very poor	poor	fair	good	very good
1	2	3	4	5

10. a) In what way did your white water kayak skills change?

got worse	did not improve	improved marginally	improved	greatly improved
1	2	3	4	5

b) To what do you attribute this change, if any?

_____

_____

11. a) How often did you make use of the Calming Down Response, during the weekend course?

did not use it	1-5 times	6-10 times	1-5 times per day	6-10 times per day
1	2	3	4	5

b) Identify the situations in which you did make use of the Relaxation technique during the weekend.

_____

_____

12. a) How would you rate the Relaxation technique's effectiveness?

didn't help at all	barely helped	helped a bit	helped	greatly helped
1	2	3	4	5

b) Please comment on your answer.

_____
_____
_____

13. What part of the course do you think was the most:(if any?)

enjoyable: _____
_____
_____

exhilarating: _____
_____
_____

annoying: _____
_____
_____

boredom: _____
_____
_____

fear: _____
_____
_____

14. Compare your actual experiences described in #13 above, to what you expected before the trip. Read over your expectations careful. Please comment briefly on any situations where your expectations were very different from you actual experience. To what do you attribute the difference to?

enjoyable: _____
_____
_____

exhilarating: _____
_____
_____

annoying: _____
_____
_____

boredom: _____
_____
_____

fear: _____
_____
_____

15. Any additional general comments:

_____
_____

N.B. Please continue comments on the back of this sheet.

APPENDIX J
DEFINITIONS OF RIVER TERMS

APPENDIX J

DEFINITIONS OF RIVER TERMS

In order to better appreciate the requirements of the kayak course, some basic river terms and kayak skills were defined:

Downstream/upstream: This refers to the paddler's direction of travel. For instance, a kayak floating sideways in the current will have an upstream side (the side facing up the river) and a downstream side.

Eddy: Used frequently by kayakers as a rest stop and as a chance to look around, this hydraulic formation is a result of water flowing around a boulder in an attempt to fill the space left downstream of the rock. "The water pouring in downstream of the boulder, causes an upstream flow" (Watters, 1982, p. 92). The upstream flow is called an eddy. This is also created by irregularities on riverbanks.

Eddy line: This refers to the current differentials between the main downstream and the upstream flow resulting from the eddy. At times, when the main current is very powerful, the transition zone is called an eddy wall.

Eddy-in: This maneuver enables a paddler to enter an eddy. By paddling quickly toward it, the kayaker must wait till one third of his craft crosses the eddy line, then lean on the inside of the turn. The boat will pivot quickly, turning the bow of the kayak upstream.

Ferry: This river technique enables a boat to cross a river from one side to another. This is done by angling and leaning the craft in the direction the person chooses to go. When ferrying, it is important to consider: the speed of the current, the speed of the boat, the boat's angle relative to the current and the amount of downstream lean.

Hole (Souse hole, Hydraulic): This term refers to the depression just behind a submerged rock or ledge causing a recirculating patch of foam. "Holes have the capability of stopping the forward momentum of boats, flipping them over, or in some cases, entrapping the boat by the violently curling-back, foamy water" (Watters, 1982, p. 95). The smaller holes present little or no problem to the canoeist or kayaker. In fact, small hydraulics are very enjoyable when surfed sideways amid the splashing white water (provided the kayaker knows to lean downstream).

Peel-out: This technique is a very effective way of exiting an eddy. Initially, with increasing speed, the kayaker crosses the top of the eddy line at a 45^{0} angle and as the boat rapidly spins downstream the paddler leans in the direction of the current.

Standing waves (Haystacks): This refers to a series of waves created by an influx of fast surface water colliding with slow-moving bottom water. The outcome creates a series of regular waves which remain stationary, depending on the fluctuation of water level. Haystacks vary greatly in size, according to the volume of the surface current.

Surfing: A kayaker can paddle upstream onto a standing wave and achieve a state of equilibrium with the bow of the kayak facing down the upstream side of the haystack.

APPENDIX K
THE KAYAK COURSE OUTLINE

APPENDIX K

THE KAYAK COURSE OUTLINE

The Alberta Whitewater Association offers three course levels of kayaking: Level I, Level II and Level III. Level I simply introduces the novice paddler to the fundamentals of propulsion, maneuvering, and some survival strokes. This course is performed on lakes and/or on class I rivers.

A Level II white water kayak course is intended for individuals with a Level I certificate or with considerable flat water experience. The teaching takes place on land as well as on the river.

At the Upper Red Deer river, experimental students were taught according to the Alberta Whitewater Canoe and Kayak Curriculum of 1981-82. The participants were provided with river reading lectures, observations and discussions that enabled them to understand the basics of water currents, eddies, river dangers, hydraulics, waves, rescue procedures, and etc.

On the river, students were instructed and evaluated on the following skills:

1. Eddy Turns - This entails maneuvering one's kayak into and out of an eddy using both a reverse sweep and a bow draw at different times.
2. Ferry - The student must ferry across a moderate current, which is at least 15 meters wide to one side, and back with waves of about 60 cm high.
3. Backferry - Backferrying involves manipulating the kayak backwards across a moderate current of at least 15 meters wide to one side and back.
   The waves must be about 30 cm high.
4. Work a Souse Hole - The kayaker must voluntarily play in small holes or stoppers that will hold the boat.
5. S-Turns - These turns are performed by driving out of a strong eddy on one side of the river, paddling across the river, and turning into a strong eddy on the other bank thus creating an S pattern.
6. Wet Exit - Each participant must demonstrate the proper exit procedures when capsizing one's boat in the river. Key elements in the wet exit are to maintain continuous contact with the boat and the paddle.

Students are given a pass if they have fulfilled all the previously stated requirements while obtaining a total grade of at least 75%.

A conditional pass is presented if the participant's grade is between 50% - 74% and consequently needs more practice on specified weak abilities. He is then encouraged to bring his skills up to par before registering for a Level III White Water Kayak course.

A grade any lower than 50% constitute a failing mark and the candidate is asked to take the course once again.

The number of passes within the experimental group stood at five while four were termed conditional passes.

APPENDIX L
CHICO'S LOGBOOK

APPENDIX L

FRANCISCO (CHICO) LOMEZ'S LOGBOOK

Wabasca River

August 31

Most enjoyable	Unloading the boats on lake Wabasca, 50 SUP and joking and laughing in the van, 55 SUP
Most boring	Waiting to arrive at the lake, 20 SUD
Most exhilarating	Finding the Game Warden, 45 SUP
Most annoying	The group's indecision, 40 SUD
Most fearful	n/a
Comments	

September 1

Most enjoyable	Catching a fish on my first cast, a 3 lbs Pickeral, 60 SUP
Most boring	Long straight stretches of river, 20 SUD
Most exhilarating	The group's company, 55 SUP and the scenery, 50 SUP
Most annoying	The rain and the bugs, 45 SUD
Most fearful	n/a
Comments	

September 2

Most enjoyable	Pickeral fishing along with Peggy and Joanne's company, 65 SUP
Most boring	n/a
Most exhilarating	Steamrolling in the tent, 40 SUP
Most annoying	The wind, 50 SUD
Most fearful	n/a
Comments	

September 3

Most enjoyable	Water fights, 70 SUP and sweat lodge 60 SUP
Most boring	n/a
Most exhilarating	Jumping into the river after the sauna, 30 SUP
Most annoying	The head winds, 35 SUD
Most fearful	n/a
Comments	

September 4

Most enjoyable	Exploring the trapper's cabins, 40 SUP
Most boring	Long straight stretches, 25 SUD
Most exhilarating	Seeing Wild Geese, Ducks and a Bald Eagle, 35 SUP
Most annoying	My fatigue when paddling - sore back, 55 SUD
Most fearful	Bruce and I loosing Jashua on the river. We found him one mile down the river.
Comments	

September 5

Most enjoyable	Reaching the bridge, 75 SUP and finding help when we got there, 65 SUP
Most boring	n/a
Most exhilarating	Companionship of the whole group, 60 SUP
Most annoying	The rainstorm we experienced while unpacking, 25 SUD
Most fearful	n/a
Comments	Everyone seems to have sore backs and sore muscles.

September 6

Most enjoyable	Sitting in the sun and tanning, 55 SUP
Most boring	Waiting for Cramer and Joe to arrive, 20 SUD
Most exhilarating	Seeing the University van for the first time, 70 SUP
Most annoying	n/a
Most fearful	Thinking that Cramer would not show up, 40 SUD
Comments	

Kayak Certification; Upper Red Deer River

September 26

Most enjoyable	Learning new skills on the river, 55 SUP and horsing around inside the wall tent, 45 SUP
Most boring	Waiting for people to get ready to go on the river, 30 SUD
Most exhilarating	Doing a roll in the cold, cold water, 60 SUP
Most annoying	The rain, snow and the cold, 25 SUD
Most fearful	Learning new skills in the Class II water
Comments	

September 27

Most enjoyable	Feeling myself getting better in the kayak, 40 SUP
Most boring	n/a
Most exhilarating	Running the Coal Camp Ledge, 85 SUD
Most annoying	The weather, rain while around the fire at night, 20 SUD
Most fearful	The wait before the Coal Camp Ledge, 50 SUD
Comments	I'm learning so much - playing in holes, surfing, back ferries, eddying in and out, etc. Communication seemed to break down a little. The five people that came on Friday seem to be left out a bit. Overall, it is till not that bad. Some of the work is starting to be done by the same few people. A few people of our group are starting to coast. Fitness level is fine yet the cold weather is slowing us down a bit.

September 28

Most enjoyable	Cooking supper, 30 SUP and finding out that I passed my Level II, 50 SUP

Most boring	n/a
Most exhilarating	Making the run from the Double Ledge to below the Coal Camp Ledge, 85 SUP
Most annoying	So many people on the river; Our 12 kayaks, 4 canoes and the British Army boats, 30 SUD
Most fearful	Hitting the Coal Camp Ledge rapid in the middle, 20 SUD and fear of falling in for the third time because my feet were getting very cold.
Comments	It still looks like some people are coasting. Some people are complaining about tired arms. For me, its really not a problem.

APPENDIX M
BRUCE'S LOGBOOK

APPENDIX M

BRUCE WOOD'S LOGBOOK

Wabasca River

August 31

Most enjoyable	n/a
Most boring	The river was quite boring with its slow speed and weeds, 40 SUD
Most exhilarating	We saw an Osprey eagle flying away with a snake in its claws, 20 SUP
Most annoying	n/a
Most fearful	Marge stepped into a pot of boiled water and burned her foot.
Comments	

September 1

Most enjoyable	Trying to figure out Grant's riddles, 35 SUP; Canoe sailing, 30 SUP
Most boring	The long slow waters of the Wabasca river, 30 SUD
Most exhilarating	I watched Chico catch a fish and I reminisced on how it felt to actually catch a fish and felt it pulled. We hit a possible Class 1 rapid which raised my SUPs to 45. Wow, what excitement; the greatest amount to date.
Most annoying	n/a
Most fearful	n/a
Comments	Fitness is lower than expected people tired of paddling.

September 2

Most enjoyable	The most enjoyable moment is when I was catching fish and watching Rick do dry launches from a slope in the kayak, 45 and 30 SUP
Most boring	Again, it was the slow speed of the river even though it did increase at some points to a supposed "Class III" rapid.
Most exhilarating	Going through those "Class III" (HA HA) rapids in the kayak.
Most annoying	The strong head winds, 35 SUD
Most fearful	Initial paddling in the kayak in rapids, 45 SUD
Comments	Fitness is low but levelling off. Great circle back rubs tonight for the aching muscles.

September 3

Most enjoyable	Experiencing the Sweat lodge for the first time and the experience of the first dip in the river after. The water fights were also quite enjoyable, 40 SUP
Most boring	n/a

Most exhilarating	All the fun and good times our group is having, 55 SUP
Most annoying	The strong headwinds and the quality of sleeping bag caused me to perspire profusely at night, 40 SUD
Most fearful	n/a
Comments	Heavy water fight started by Valerie and Joe. It continued all day with winds gusting up to 60 km/hr.

September 4

Most enjoyable	When we visited the trappers cabins and found out some of their habits of living; Smores and making bannock, 30 SUP
Most boring	At this point, I feel that all things that happen from now on, cannot be boring but "experience", something which I can learn and live from.
Most exhilarating	Paddling with the group and really feeling as though I am a big part of it all. Knowing and appreciation that I can measure up to their skills makes a warm feeling grow within me, 55 SUP
Most annoying	Sleeping on the garden with one (log) rock under my back and one under my shoulder blades.
Most fearful	n/a
Comments	

September 5

Most enjoyable	Reaching our final campsite and talking to our visitors, 45 SUP
Most boring	n/a
Most exhilarating	n/a
Most annoying	Rain as we began to set up camp
Most fearful	n/a
Comments	Randy gave us an informative talk on Diabetics and Insulin.

September 6

Most enjoyable	A very relaxing day, 30 SUP
Most boring	n/a
Most exhilarating	When Cramer arrived at 8:00 pm, we couldn't wait to get going, 55 SUP
Most annoying	n/a
Most fearful	n/a
Comments	Now at the end of the week, I feel much closer to the group and think that little if anything can keep us from reaching our goal we set for ourselves. I hope this is true and that we succeed at everything.

Kayak Certification; Upper Red Deer River

September 26

Most enjoyable	Sitting in the tent and just being silly while getting to know the group, 35 SUP
Most boring	n/a
Most exhilarating	The first breath taking plunge into the cold water. It was scary but refreshing once out and exercising on land, 20 SUP
Most annoying	Not being able to control my kayak as I wanted, 25 SUD. The snow was a pain in the morning but it was also a reminder to me of the fun I have had with snow, 15-20 SUD; Not being able to warm up after having dumped. One good thing about it is that it meant that I could get off the river and on to safe dry land.
Most fearful	The ice cold water with its rock hidden in the bottom. My perceived rusk of danger was much higher than necessary, 50 SUD
Comments	I am still a bit reluctant of my skills and of what the river has in store. Coal Camp ledge was a reminder of the river's power.

September 27

Most enjoyable	Running the river today and experiencing and reading what it holds in store for us. I still need some work on my skills so I can feel more confident, 10 SUD and 50 SUP
Most boring	n/a
Most exhilarating	Going over Coal Camp Ledge and almost coming out on top, 15 to 40 SUP
Most annoying	The cold water again was a problem for me between getting used to it and learning, 30 SUD; The snow, but now I am enjoying it more and more and more, 20 to 25 SUD
Most fearful	Going through the big waves, 25 SUD;
Comments	We all worried about Randy, his diabetes and potential problems.

September 28

Most enjoyable	Going successfully down the river and playing in many different situations with a SUPER ride over Coal Camp Ledge, 10 SUD and 65 SUP
Most boring	n/a
Most exhilarating	First feeling good about myself and skills/confidence on the river, 35 SUP
Most annoying	The number of people and the river in a certain area we travelled ie. Britsh army, canoes and other kayaks, 20 SUD
Most fearful	The initial set out for the day, was a bit scary but my confidence did overtake this. Randy was the

bearer of bad tidings today. His kayak received a very large hole in the bottom and therefore a deep low in his weekend all the group is worried about him and if it can be fixed. I am starting to really enjoy this weekend and the kayaking that goes with it.

Comments

Everyone is opening up more and becoming more of a family, cooperation is high but general fitness needs much work.

APPENDIX N
JOANNE'S LOGBOOK

APPENDIX N

JOANNE BLANCHE'S LOGBOOK

Wabasca River

August 31

Most enjoyable	Paddling with Chico once again, SUP 50
Most boring	Waiting around in Wabasca, trying to get things organized, SUD 15
Most exhilarating	The point where I realized that I was really going on a canoe trip with these great people, SUP 50
Most annoying	The mosquitoes at the put-in, SUD 30
Most fearful	Going into skids on the gravel road with a load full of people and a trailer of canoes, SUD 20 and SUP 20
Comments	The cooperation is really good; everybody pitched in to load up and camp was put up in a record 20 minutes! The pace was pretty laid back. People seemed happy to be out of the van.

September 1

Most enjoyable	Talking to everyone and establishing relationships by just getting to know them, SUP 40
Most boring	The last couple of miles seemed quite monotonous and slow, SUD 10
Most exhilarating	Playing "Rambo" with the canoes and thinking we might tip, SUP 10
Most annoying	Jeff's puns are getting to me, SUD 5
Most fearful	n/a
Comments	People seem to be setting into certain roles, which is working well. We had a very long day today. My shoulders are tired. Not too many other complaints

September 2

Most enjoyable	Crashing into Karen, Bruce and Marge in their tent and steam rolling them in the evening; YIPPEE, SUP 35
Most boring	Grunting into the headwind that pushed us upstream, SUD 20
Most exhilarating	Our group back rub was marvellous, SUP 60
Most annoying	Discovering that the Class III rapids were just ripples, SUD 40
Most fearful	n/a
Comments	Nice to get off the river earlier and have a shorter day. Everyone was disappointed that we couldn't give'er in the Class III rapids which didn't exist.

September 3

Most enjoyable	Changing paddling partners. Had a riot singing crazy songs with Karen and just talking with Peggy, SUP 60
Most boring	n/a
Most exhilarating	Taking a canoe at about 8:30 pm and floating downstream. Calm, clear, quiet and time for ME only. Felt real close the the boat, water and the area, SUP 85
Most annoying	Trying to pull the second kayak (Joshua) with the other into a headwind, SUD 10
Most fearful	n/a
Comments	Some minor flare-ups just before supper time Otherwise good group coping. The group is slower at getting going as a group but everyone pitching in. People seem to be doing the same things, ie) Karen always cooking.

September 4

Most enjoyable	Taking a 20 minute snooze in the boat while Peggy practised her solo skills, SUP 20
Most boring	The straight stretches of the river, SUD 20
Most exhilarating	n/a
Most annoying	Getting my period this morning, SUD 20
Most fearful	n/a
Comments	The group coping is still pretty good. Some people may need to express their feelings out loud. Tried to have a group meeting to decide how to get to or if we should go to Trout Mountain Ranger Station. Fell apart due to bugs and was not resolved. It is frustrating when everyone doesn't participate in group discussions. We later decided by consensus with everyone speaking their piece. It went well. Everyone was slow this morning. It went well throughout the day. I'm tired and I heard some similar complaints. Much slower today even with less headwind.

September 5

Most enjoyable	Speaking French with Grant. He was very patient and didn't laugh at my accent, SUP 35
Most boring	Feeling the ache in my shoulders, especially in my trapezius muscles, SUD 5
Most exhilarating	Trying to do two Eskimo rolls gave me an indication of just where I'm at with it. I was actually getting an adrenaline rush, SUP 15
Most annoying	The bugs at the bridge, SUD 10
Most fearful	My first roll in very cold, dark water caused me to disorient myself. Kind of embarrassing too, SUD 40

Comments	Group coping went well once we made our group decision everything went much smoother.

September 26

Most enjoyable	Sitting in my sleeping bag around midnight, laughing, joking and socializing with everyone, 45 SUP
Most boring	In the morning , my feet were freezing and that was a drag. 30 SUD
Most exhilarating	Discovering that a low brace downstream really is stable, 60 SUP
Most annoying	I was annoyed with myself for not pitching in and doing more work, 35 SUD
Most fearful	n/a
Comments	Woke up to a white world. It had snowed and rained all night. The cold water was not as bad as I expected. At the end of the day, everyone seemed quite strong.

September 27

Most enjoyable	Having the wrestling match. Everybody just went crazy, 70 SUP
Most boring	n/a
Most exhilarating	Not flipping and going for a swim yet. I feel really confident. 60 SUP
Most annoying	Missing some front ferries, 20 SUD
Most fearful	n/a
Comments	The weather was about the same as yesterday with less snow (it has melted). My hands get tired in the cold water. We had some cold people on the river which affected their progress.

September 28

Most enjoyable	Getting a backrub from Karen and Marge (AAHH) 60 SUP.. Knowing the river well enough to find good waves and holes and I was able to be independent. 70 SUP
Most boring	Waiting in eddies while people were rescued. Nothing major, 5 SUD
Most exhilarating	Surfing the hole sideways, FANTASTIC!, 75 SUP; Going nose first into a hole that held me solid, 90 SUP
Most annoying	P. ED 382 was not pitching in to load boats and watching Paul try to do their share, 25 SUD
Most fearful	When I was stuck in the hole and for a few seconds not thinking I knew how to get out, 20 SUD and accompanying adrenaline rush 50 SUP

Comments	Grant showed us a back ferry; I find it easier than the forward ferry, I also sat in a hole, sideways. I did a successful wet exit after leaning upstream on a peel-out. Encouraging people at coal camp ledge was fun. The relaxation technique is neat; I'm actually starting to use it quite often.

APPENDIX O
KAREN'S LOGBOOK

APPENDIX O

KAREN RICHARDS'S LOGBOOK

Wabasca River

August 31

Most enjoyable	Canoeing through the Indian Reserve, SUP 20
Most boring	Countless trips back and forth at the put-in, SUD 15
Most exhilarating	Leaving the University of Alberta, SUP 40
Most annoying	Having to leave my Licorice Milkshake, SUD 5
Most fearful	n/a
Comments	SUP--> Leaving the U. of A. Finally after such a long wait... We are leaving for our first Explorations Trip - Finally packed, loaded up, coffeed up - Everybody is ready and we are off. SUD--> Arriving in town and running around - confusion/craziness; all we want is to get on the river.

September 1

Most enjoyable	Man, did it feel great to be in such a neat place with neat people and laughing ... Laughter all day, SUP 70
Most boring	The rain showers dampened spirits at times - more so the continuous Flat water. Continuous Flat Water, SUD 10
Most exhilarating	Hitting the first Fast Water, SUP 50
Most annoying	n/a
Most fearful	n/a
Comments	

September 2

Most enjoyable	My canoe partner - Marge, SUP 75
Most boring	Continuous winding river and flat, SUD 10
Most exhilarating	Taking water in, while being stuck on a rock, SUP 86
Most annoying	A little disappointed because the river is flat and the headwinds are strong, SUD 10
Most fearful	n/a
Comments	

September 3

Most enjoyable	Seeing Mama Moose and two babies, SUP 25
Most boring	No RAPIDS... STILL! SUD 25
Most exhilarating	Racing in the kayak, SUP 65
Most annoying	Headwinds all day!! SUD 35
Most fearful	n/a
Comments	After paddling for a good part of the day, it was great to get in the kayak and just go; No

	weight/close to the water. I really enjoy canoeing but the headwinds were a bit much. It really took away from enjoying canoeing.

September 4

Most enjoyable	Sharing thoughts and ideas with my partner, SUP 40
Most boring	n/a
Most exhilarating	Taking time to soak it all in, SUP 60
Most annoying	Harsh language, SUD 25
Most fearful	n/a
Comments	It was great to have that extra time today to absorb all the scenery; the little animals and just thank God for being alive. At times, the language that gets tossed around so freely can be annoying as well as frustrating. The personalities came out today with everyone getting tired and with muscles beginning to ache. Decisions were made considering all.

September 5

Most enjoyable	Marge and I did some Birch Bark writings, SUP 40
Most boring	n/a
Most exhilarating	The many sites along the way, SUP 60
Most annoying	A stomach ache, Yuck! SUD 15
Most fearful	n/a
Comments	We paddled quite leisurely today and saw beautiful sites;a hidden hide-away, Deer tracks, Bear tracks... It took my breath away. Of all the times to get a stomach ache! Fortunately, it didn't last long. Good thing. Overall, it was a SUPER DAY.

September 6

Most enjoyable	Kayaking with Marge, Grant and Joshua, SUP 80Most boring n/a
Most exhilarating	Driving home with caffeine poisoning, SUP 95
Most annoying	n/a
Most fearful	Almost wiping out on a corner with the van and trailer, SUP 30
Comments	What a crazy bunch! While going home, there was some definite closeness expressed and the caffeine just boosted spirits! I want to do this kind of tripping again. Hyper from Start to Finish. Great cooperation in packing up and unloading at the University. Everyone was a bit tired and in need of a hot shower. Terrific people- This year looks great!

Kayak Certification; Upper Red Deer River

September 25

Most enjoyable	The trip down from Edmonton to the Upper Red Deer. Getting to know Bruce, Marge and Muskeg (Joanne) better, SUP 50
Most boring	n/a
Most exhilarating	Seeing the snow ... the first snow of the year! SUP 40
Most annoying	Watching the 382 class stand around before departure. After all it was a group trip and we were in it together ... and that included packing up too! Everything seemed really disorganized, SUD 30
Most fearful	Standing on the river bank, listening to the pounding of the waves; seeing the white water in the dark. My God! What have I got myself into? Am I ready? And where is my confidence? I don't know if I'm ready for the stuff! Tomorrow I'll know ... I guess, SUD 70
Comments	The communication was good except with 382 when leaving the University; disorganized. The cooperation was fair; not everyone participated in packing before leaving. Everyone was hyper and ready to go! YIPPEE!

September 26

Most enjoyable	Having my Colt cigars at the end of the first day and knowing I'd mad it out, alive, SUP 25
Most boring	My mind was too preoccupied to be bored
Most exhilarating	Ferrying across and actually doing it. - not tipping; building my confidence. I know I can do it. I just have to relax, SUP 75.
Most annoying	I was most annoyed with myself for being so afraid. What a chicken I was when I started the day! Everybody else "appeared" so relaxed. What the "#@^*\" was my problem? SUD 20
Most fearful	The way I felt for most of the day, I didn't want to get near the water. Inside, I didn't feel relaxed or confident - I didn't want to tip... As a result, I was silent mostly! SUD 95
Comments	Two hours on the river was plenty for the first day. My shoulders are aching from slipping on a low brace. The group was enthusiastic and supportive all day.

September 27

Most enjoyable	Talking with Debbie, in the afternoon. Her honesty and trust in sharing her personal struggles; Feel closer! SUP 45

Most boring	The day was too eventful to be boring! n/a
Most exhilarating	Going over Coal Camp Ledge not once, but twice and not tipping. What a boost to my overall confidence. I think I'm starting to enjoy this kayaking stuff. I remembered to relax, take deep breaths and listen to what Roger had said and it all worked out great. I am excited about tomorrow, SUP 95.
Most annoying	Not catching anything on my fishing rod except a leaf, SUD 2
Most fearful	Approaching the Ledge for the first time and truing to block out the possibility of tipping. Here goes! SUD 35
Comments	Everyone is working together and cooperating well. People's fitness level was good! But it was plenty for one day. A few cold people from tipping.

<u>September 28</u>

Most enjoyable	Cruising down the river with more confidence. I feel much better today than ever, (hyper), SUP 100
Most boring	Waiting to tackle the waves again. Just felt like going all day long, SUD 10
Most exhilarating	Going into the hole for the first time - I did it !!! Feeling the water hold me there was unreal. I really discovered the power of water. WHEW! What a feeling, SUP 95
Most annoying	Forgetting to relax and prepare myself before shooting over the ledge - Forgot to brace and tipped . . . COLD SUD 10
Most fearful	Tipping for the first time and losing all sense of where I was. I guess you can't lean upstream when you're in a hole sideways. I'm slowly learning through experience, SUD 35.
Comments	. . . and now I'm home . . . alive and warm . . . and 5 days ago I was scared to death.

APPENDIX P
P-1 RESPONSES FOR THE PRE CANOE QUESTIONNAIRE
P-2 RESPONSES FOR THE POST CANOE QUESTIONNAIRE

APPENDIX P-1

RESPONSES FOR THE PRE-CANOE QUESTIONNAIRE

1. How many years of white water canoeing experience do you have?
none 1-2 3-5 6-10 11 or more

Percentages:
30% none
40% 1 to 2 years
30% 3 to 5 years

2. How would you rate your white water canoeing skills?
poor fair average good very good

Percentages:
10% poor
20% fair
50% average
20% good

3. What is the most difficult class of river you feel comfortable canoeing?
Class I Class II Class III Class IV Class V

Percentages:
30% class II
70% class III

4. What is the most difficult class of river you would feel confident leading others on a canoe trip?
Would not lead Class I Class II Class III Class IV

Percentages:
10% would not lead
20% class I
60% class II
10% class III

5. How would you rate your skills?

Average:	0 - 2 inadequate	3 marginal	4 - 5 adequate
a) Swimming:		4.4	
b) First Aid:		3.4	
c) Search and Rescue:		3.4	
d) River Canoeing:		3.8	
e) Trip Leading:		3.3	
f) Other:	Only two participants answered: Cooking and Camping skills.		

PART II

6. What part of the trip do you think (or hope) will be the most:

Answers:

enjoyable?	White water; Working together and meeting new people; Time spent around the fire; Steam bath; Wilderness surroundings;
exhilarating?	Going through white water; Surfing; Solo white water canoeing;
annoying?	Portaging; Bugs; Tipping the canoe; Waiting for a group decision; Slow paddlers; Getting up early in the morning;
fearful?	Rapids class IV - V; Large rocks and sweepers; Beans for supper; The remoteness of the area;
boring?	Talking rather than doing; Food; The drive down and back; Slow - moving water;

7. The Canoe Alberta Reach Report stresses that mosquito head nets, heavy thick clothing, leather gloves, mosquito-proof tents and "lots of insect repellent should be included on the equipment list."
How will you deal with the mosquito problem in a practical sense and emotionally?

Answers:

Accept it; Insect repellent will do fine; Wear thick clothing, nets, fly dope; I'll kill them; Will try not to let them bother me too much; I'll put up with them; Ignore them as much as possible.

8. In the Canoe Alberta Reach Report, they cite R.G. McConnell's report in which he writes " Great care had to be exercised in descending the unknown Wabiscaw River with its numerous rapids," Canoe Alberta also mentions that at high water, there is a 5 km stretch of rapids consisting of 1 m standing waves.
What are your thoughts and feelings about this stretch of rapids?

Answers:

Challenging; Use caution where necessary - stop get out and scout the river. Portage where necessary; I think great care must be taken in canoeing any type of rapids. Research on the river should be done before attempting it and if there is any doubt about the safety of a stretch of rapids, it should be portaged; Whoooe!; I think it would be very exciting and would love to try canoeing it; All right!; To scout it very carefully and be conservative while leading. Let individuals make decisions about what they are comfortable with. Don't push anyone too hard; Could be very exciting and very wet with the possibility of dumping. Not to worry; Exhilarating, high risk involved, a little nervous and excited all at once.

9. Why do you enjoy participating in activities such as white water canoeing, white water kayaking, or rock climbing?

Answers:

It's challenging. It demands every part of me to work together - physically and mentally. It's exciting, unpredictable, . . . it's ME!; Excitement and enjoyment of nature's features; I love the challenge, being outside, and the thrill of accomplishment. Also I enjoy the type of people who do these activities; I enjoy it because I shine, glow and am at my best when I'm in the outdoors; I like to live on the edge and enjoy the thrills and excitement when white water paddling; Hey pal, I can't really explain it but come along sometime and I will take care that you have a safe and enjoyable introduction to these experiences; A sense of inner strength.

10. Why do you think that some people don't enjoy participating in activities such as white water canoeing, white water kayaking, or rock climbing?

Answers:

Lacking a sense of adventure; Like to be secure; Weather is too cold or they never had the opportunity; They probably enjoy other types of activities which to them are just as exciting; I don't have any idea why people wouldn't enjoy these experiences. I suppose past bad experiences or fears of some kind might be clues; They think it is too dangerous and could possibly die; Because they aren't comfortable in the outdoors, the security of home is more appealing; Lack of self-confidence due to lack of skill or physical ability No interest in the outdoors. Don't like taking risks; Fear of injury, water, and death; Other activities in their life satisfy that requirement for adventure and/or risk. The outdoors just doesn't appeal to everyone.

APPENDIX P-2

RESPONSES FOR THE POST-CANOE QUESTIONNAIRE

1. Did the white water canoe trip meet your expectations?
YES 40% NO 30% UNDECIDED 30%

Why?

Answer:

(Yes) I was able to find out what the people on the "Explorations" crew are really like. What their values are, likes, dislikes, and their reactions and interactions with others; We still had a lot of fun and met a lot of new people. The scenery was great; I expected a remote wilderness experience and I did not expect to see many rapids; Because I got to know and like everyone a lot.

(No) I had very few expectations, none of which were extremely important but I did expect more challenge from the river; Lack of white water but the cooperation within the group was great; From what we read on the Wabasca we all expected more rapids. It was as I perceived it to be before I knew Wabasca).

(Undecided) While there was no white water, the wilderness experience and the group got to know each other well; Yes as far as team building and communications. No as far as white water canoeing - the mighty Wabasca is missing a few ripples.

2. How would you rate your white water canoeing skills?
poor fair average good very good

Percentages:

0% poor
20% fair
50% average
30% good

3. What is the most difficult class of river you feel comfortable canoeing? (According to the International Scale of River Difficulty).
Class I Class II Class III Class IV Class V

Percentages:

30% class II
70% class III

4. What is the most difficult class of river you would feel confident leading others on a canoe trip?
Would not lead Class I Class II Class III Class IV

Percentages:

0% Would not lead
30% Class I
70% Class II

5. What part of the trip do you think was the most (if any)?:

Answers:

enjoyable? Kayaking and paddling consistently; talking, joking around and the sweat lodge; getting to know members, one on one and then having fun with each (canoeing and water fights); Laughter from day one on . . .; Taking time for me; The sweat lodge and water fights; interaction with others, conversation around the campfire.

exhilarating? Getting wedged on a rock and standing on the gunwales while the boat filled; Steam bath, water fights; Kayaking after paddling long and had in the head wind; My two women, man; Watching the bald eagle; Kayaking down hills, doing Eskimo rolls and surfing.

annoying? Canoeing into strong headwinds; Bugs; Listening to Jeff sometimes; the river; The indecisions of what to do such as at the rangers station at the beginning of the trip.

fearful? Marge's accident; Catching some kind of disease, man; Drinking the water from the river.

boring? Continuous flat water; Long stretches of what seemed to be swamp; Waiting for our ride back home; my sex life; The long stretches of lake water (class 0.5).

6. Any additional comments or suggestions for the next trip or for next years' "Explorations" group?

Answers:

Do not tow a kayak down flat water; Be very laid back and don't get hung up on it being perfectly planned; Go on a river with a higher level of water for this time of the year; Be sure that all group members know and share in the trip preparation, ie. what type of river, etc; Now they can come and talk to us about low water levels; Pick a route with more exciting water. Freeze-dry the fruits and vegetables. This will make it, less of a grunt; Choose a river that is challenging, one that will add excitement to your trip.

APPENDIX Q
Q-1 RESPONSES FOR THE PRE-KAYAK QUESTIONNAIRE
Q-2 RESPONSES FOR THE POST-KAYAK QUESTIONNAIRE

APPENDIX Q-1

PRE-KAYAK COURSE QUESTIONNAIRE
Part I

1. How many years of white water kayak experience do you have? none 1-2 3-5 6-10 11 or more

Percentages:
100% none

2. How would you rate your white water kayak skills?
poor fair average good very good

Percentages:
44% poor
56% fair
0% average

3. What is the most difficult class of river you feel comfortable kayaking?
Class I Class II Class III Class IV Class V

Percentages:
44% Class I
44% Class II
12% Class III
0% Class IV

4. What is the most difficult class of river you would feel confident leading other kayakers?

Would not lead Class I Class II Class III Class IV

Percentages:
67% Would not lead
33% Class I
0% Class II

PART II

5. The Travel Alberta Reach Report states that the Upper Red Deer River is only recommended for advanced open Canoeists and intermediate white water kayakers. It goes on to mention that several ledges (1.25 m in height) are found throughout the river. Are you concerned about your level of competence for a river of this calibre?
not at all a little somewhat yes yes greatly

Percentages:
0% not at all
33% a little
11% somewhat
56% yes

6. The Reach Report also mentions that the Red Deer's cold water is "a definite danger for most of the summer". Does this worry you?
not at all a little somewhat yes yes greatly

Percentages:
0% not at all
33% a little
22% somewhat
45% yes

7. Imagine yourself being the "sweep boat" of a group of kayakers and you loose sight of them around a river bend. Casually, you paddle around the bend and notice that the group is on shore, portaging the class V rapids. Unfortunately, you are too far into the ravine to turn back and there is no way off the river above the rapids. Gradually, you hear the "roaring" of the white water. How would you rate your ability to control your emotions and your thinking in a rational mode?
very poor poor fair good very good

Percentages:
0% very poor
22% poor
56% fair
22% good

8. You have been shown a relaxation technique to be used prior to a stressful activity. Do you believe that it will help you control your thoughts and emotions during a stressful moment?
not at all a bit to a certain extent yes yes greatly

Percentages:
0% not at all
11% a bit
77% to a certain extent
11% yes

10. Identify the part of the kayak course that you think or hope will be the most:

Answers:
enjoyable? Easy water - developing skills - slowly - confidently; Being in a kayak with a great group of people; Overcoming the big water successfully and enjoying the group; Playing on the river, learning to control the boat; Learning technical skills; The group's interaction; Gaining some confidence in kayaking.
annoying? Not being able to roll in the cold water; The weather; The snow; Not feeling comfortable enough to really go for it for fear of tipping and freezing to death; Snow and rain; Ferrying across the river; Being upside down in rapids; The rain, snow and cold.
exhilarating? Surfing; Completion of an Eskimo Roll on the river; Being able to roll in moving water; Feeling the water for the first time; I hope I can learn to feed comfortable and control the boat to do all the skills; Shooting through rapids and not tipping; Going over a

ledge; Heavy white water and being in full control; The water and the possibility of me kayaking the water successfully.

fearful? Rolling; Getting trapped under a ledge in a class IV; Loosing control while upside down in the water; Rocks and large ledges; Getting very cold, too cold to kayak and too cold to enjoy myself; Tipping - Eskimo roll or wet exit??; Going into a hole; When the kayak goes vertical; The water and my low skill level and being in water above my abilities.

boring? The weather bothering our activities; Very tired because of the drive; The weather and always being wet and cool; Warming up.

APPENDIX Q-2

POST KAYAK COURSE QUESTIONNAIRE

1. a) To what degree did the white water kayak course meet your expectations?

not at all a bit somewhat yes yes greatly

Percentages:

0% not at all
0% a bit
0% somewhat
33% yes
67% yes greatly

Why?

Answers:

(Yes) Seeing white water and manoeuvring in it are two different things. Being confident enough to begin to play rather than just shoot; I was able to see what a river current does to a kayak; Well not really, I didn't make any expectations.

(Yes greatly) Required a lot of learning and trust in the instructor and myself; I wanted to feel confident in a kayak and I got good instruction so I feel good and confident on my skills. It was also a lot of fun!; Educational aspect was great. I was able to really concentrate on skills - confidence was easy to build - I felt great!; I could never ferry properly. We were versed with a series of skills to practise and I felt fairly confident with them as we progressed. I never thought we would be doing some of the things we did on the river; Because I believed I advanced from a beginner to a novice in a supervised setting where river etiquette, river reading and skills were taught and demonstrated well and with safety and caring; We were able to develop our skills and yet still got to play around.

2. How would you rate the Upper Red Deer river's level of difficulty for kayaking, this past weekend?

Not Applicable Excellent Good Fair Poor

Percentages:

0% Not Applicable
78% Excellent
22% Good

3. What do you believe is your level of competence in white water kayak now?

beginner novice intermediate advanced expert

Percentages:

0% beginner
78% novice
22% intermediate

4. How would you rate your white water kayak skills?

poor fair average good very good

Percentages:
0% poor
56% fair
44% average

5. What is the most difficult class of river you feel comfortable white water kayaking? (According to the International Scale of River Difficulty)
Class I Class II Class III Class IV Class V

Percentages:
0% Class I
56% Class II
39% Class III
5% Class IV

6. What is the most difficult class of river that you would now feel confident leading others on a white water kayaking trip?
Would not lead Class I Class II Class III Class IV

Percentages:
33% Would not lead
22% Class I
45% Class II

7. If you have rated your kayaking competence and/or willingness to take on more challenging water now than before this trip, to what extent do you think this improvement is due to:

PRACTICE not at all a bit somewhat yes yes greatly

Percentages:
11% a bit
33% yes
56% yes greatly

Comments:
(5) Need more practice; Constructive feedback helped tremendously; Good instructor.

N.B. ( ) identifies the number of times the same comment was addressed.

INSTRUCTION not at all a bit somewhat yes yes greatly

Percentages:
11% yes
89% yes greatly

Comments:
(2) Great instruction/ Clear and concise instruction and plenty of guidance given by instructor; (2) The demonstrations helped immensely and learning pace was very comfortable; (3) Made suggestions and gave encouragement.

IMPROVED ABILITY TO RELAX AND CONTROL ANXIETY

not at all a bit somewhat yes yes greatly

Percentages:

33% somewhat
56% yes
11% yes greatly

Comments:

(2) My relaxation technique helped out a lot; It really worked well just before going over the ledge; It really works in clearing your head of nervousness; (2) I was never stifled by anxiety but found I was better able to concentrate and relax; I'm working on it but I still get excited fast.

8. a) Did the Red Deer river's cold water prevent you from enjoying yourself in a kayak?

not at all a bit somewhat yes yes greatly

Percentages:

22% not at all
44% a bit
33% somewhat

b) Did it worry you, during the course?

not at all a bit somewhat yes yes greatly

Percentages:

22% not at all
56% a bit
22% somewhat

9. Imagine yourself being the designated "sweep boat" for a group of kayakers and you loose sight of your friends around a river bend. Casually, you paddle around the bend and notice that the group is on shore, portaging the class V rapids. Unfortunately, you are too far into the ravine to turn back and there is no way off the river above the rapids. Gradually, you hear the "roaring" of the white water. How would you rate your ability to control your emotions and your thinking in a rational mode?

very poor poor fair good very good

Percentages:

0% very poor
0% poor
67% fair
33% good

10. a) In what way did your white water kayak skills change?

Got worse | didn't improve | improved a bit | improved | greatly improved

Percentages:

0% Got worse
0% Did not improve
0% Improved a bit
33% improved
67% greatly improved

b) To what do you attribute this change, if any?

Comments:

(5) Instruction, practice and ability to read the water more; Increased confidence and ability to relax; Being on the water for three days and the encouragement; Increased feel for the boat; Determination.

11. a) How often did you make use of the Calming Down Response, during the weekend course?

did not use it	1-5 times	6-10 times	1-5 times per day	6-10 times per day

Percentages:

0% did not use it
11% 1-5 times
44% 6-10 times
33% 1-5 times per day
11% 6-10 times per day

b) Identify the situations in which you did make use of the Relaxation technique during the weekend.

Comments:

(6) Kayaking toward the Coal Camp ledge; Prior to getting in the white water and before the start of the day; (2) While back ferrying, surfing and before doing peel-outs; When I knew I might get tense beforehand; Just before we portaged up beyond the small ledge; When I had free time; When I felt my heart rate go up.

12. a) How would you rate the Relaxation technique's effectiveness?

didn't help at all	barely helped	helped a bit	helped	greatly helped

Percentages:

0% didn't help at all
0% barely helped
33% helped a bit
56% helped
11% greatly helped

b) Please comment on your answer.

Comments:

(5) It made me feel more calm and mellow; (4) I was able to relax; I wasn't in a situation where I was really worried about my safety; (3) I was better able to concentrate on task-oriented paddling situations.

13. What part of the course do you think was the most:(if any?)

Comments:

enjoyable: Warm-up exercises; First peel-out; Doing the river trip and coal camp ledge; Running coal camp ledge for the first time and playing in the holes; Doing peel-outs at the top of an eddy - playing in a hole; The group in many ways (humour, confidence building, etc.; Seeing everyone in the group progressing and improving and having a good time; Going through the waves - Splash !!! Running the river; Going over coal camp ledge and making it.

exhilarating: Class 3 rapids and the first peel-out; My first Eskimo roll; Water in the face and on the kayak; Running the coal camp the second time right through the middle; Being able to attack coal camp ledge; The improvement in my kayak skills; Surfing in a hole sideways; Going over the ledge, Yipee! annoying: Last Eskimo roll; Wet exit; Cold water, snow and rain; Cold feet; Too many boats on the water.

fear: Being cold when arriving at coal camp ledge; Coal camp ledge; Playing in a hole for the first time; The river - It tested me!; Thinking about dumping for the first time; Burying the bow of my kayak under water.

boredom: Only two comments were made. They were: Waiting to get into a hole or a rapid; The first day when Grant explained water dynamics from shore and my feet were freezing.

14. Compare your actual experiences described in #13 above, to what you expected before the trip. Read over your expectations careful. Please comment briefly on any situations where your expectations were very different from you actual experience. To what do you attribute the difference to?

Comments:

enjoyable: Expectations were fulfilled in finding more confidence; Not knowing about the warm-up exercises; For the most part, this did happen but not until later in the trip; Expected technical work to be enjoyable and it was but it led to giving me confidence to play in more challenging stuff; I never thought that I could ever do what I'm doing now. Reasons - Great coach; Same, just kept getting better; Once I got confident - the larger challenges were really enjoyable; I never really thought we would be going over a class IV ledge.

annoying: Never thought about how crowded the river would be with kayaks and canoes; Exactly what I expected, the snow; The weather was poor as expected; Once I got moving on the river I warmed up; The cold water didn't affect me like I thought it might and I didn't realize how big a group of 13 kayaks would be; Getting cold was the most annoying thing, I expected ferrying to be the most annoying.

exhilarating: As expected; Thought I wanted to do a roll but water way too chilly - maybe tomorrow in an eddy. Didn't think I'd be successful on coal camp ledge; The white water was what I expected and I was exhilarated. The cold was invigorating; I hoped I could roll in moving water. No such luck Reason - not enough confidence; Not just through any rapids - but over the ledge. Knowledge and confidence together; I found peel-outs to be most exhilarating.

boredom: The drive down wasn't boring; The weather contributed mainly to the above answer; Waiting for people to get off the river or out of the way on the river at times it was rather boring waiting.

fear: Expectation was not different; Prior to the trip I was scared to death to roll - or do a wet exit - However, when the time came to do an exit it just happened - Thinking about it was more scary than actually doing it; Being a swimmer not afraid of water and knowing what to do if caught, trapped under water but if I hit my head on a rock doesn't matter how much I'll know; As the days went on the fear turned into excitement as practice and warming up improved skills - less fear; I did loose control under the water. Coal camp was pretty scary too; I am not as scared of ledges and rocks as I thought I would be.

15. Any additional general comments: It was fantastic; Excellent time. Thank you, Grant for your time, patience and caring. I feel very fortunate to be part of this group; Lots of clean fun perceived risk and excited individuals made for a good weekend; Grant, you did a fantastic job! Thanks for your patience, time and encouragement!; Fantastic instruction - Knew exactly what to correct,very relaxed - no big deal if someone flipped or screwed up. I'm definitely hooked. Thanks!; I wished I had more time to practise on some skills. It would have been nicer to have a smaller class split up into two groups or something. Maybe two instructors, something to consider for the next trip. For the time we had I learnt a great deal. The level of instruction was "A-1".